learning and skills development agency

Vocational higher education – does it meet employers' needs?

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research report

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Chapter 1 Introduction to the study

1.1 Background and policy context

During the 1990s and early 2000s, there was steady growth in employment in England, which in turn is affecting the occupational structure of employment and the kinds of skills required. But this overall growth masks significant variations within sectors of employment: substantial growth in areas like financial and business services, distribution, hotel and catering, and services such as education and health, is in sharp contrast to continuing declines in manufacturing and primary sectors of employment (LSC 2003). These sectoral trends have contributed to significant changes in the occupational structure of employment. The employment share of managerial, professional and associate professional posts has increased substantially from one-third to almost two-fifths over the decade (an increase of almost 2 million jobs), while the share of skilled trades and operatives posts has fallen.

Recent reports from the National Skills Task Force have identified a growing professionalism of the workforce with a concomitant shift within intermediate-level occupations from craft to associate professional and higher technician employment. But these reports also note that demand for vocational skills at intermediate levels varies by industrial sector and region. For example, the growth in employment among associate professionals and technical occupations has been concentrated in the South East region (LSC 2003). At the same time, some reviews of skills deficiencies and imbalances in England have suggested that an important emerging aspect is a mismatch between the supply of people acquiring academic qualifications at degree level and the demand for high-quality vocational skills at a more intermediate level (LSC 2003). However, the size and nature of actual skill shortage problems in this area is not clear, and is subject to different opinions.

The government's White Paper on the future of higher education, published shortly after this study began (DfES 2003a), asserted that national economic imperatives supported the target of increasing participation in higher education to 50% of young people by 2010. Moreover, to meet the prevailing skills gap at associate professional and higher technician levels, more work-related and employer-focused higher education should be developed through the expansion of foundation-degree provision and mature students already in the workforce developing their skills.

Despite this new push for work-related higher education, the government's HE policy over the past two decades has been driven by a belief in the contribution of higher education to economic prosperity. As part of this policy, HE institutions have been encouraged to develop the employment relevance of their undergraduate provision.

But higher education within the UK is not the sole preserve of HE institutions and the HE sector. Traditionally, FE colleges in the learning and skills sector have also delivered a wide range of higher education in the form of higher national certificates and diplomas (HNCs/HNDs) and other undergraduate (u/g) programmes, in addition to a range of specialist education and training programmes leading to awards of professional bodies and major public examining bodies. FE colleges' importance as providers of higher education has also been growing in recent years, partly as one element in successive governments' drives to expand and widen participation in higher education. For example, the 1987 White Paper on higher education (DES 1987) highlighted possible sources of growth in higher education in terms of the vocational route from further to higher education (in the form of HNDs) and an adult learners' route (in the form of Access courses). A decade later, the National Committee of Inquiry into Higher Education (which had been charged with making recommendations to the government about the shape and direction of higher education in the UK for the next 20 years) cautioned against any growth in degree-level qualifications offered by colleges, but recommended that 'more sub-degree provision should take place in further education colleges' (NCIHE 1997, paras 16, 41). The most

recent government White Paper on higher education reiterated the FE colleges' importance, in particular in the delivery of foundation degrees.

The government plans for education for 14–19 year olds (DfES 2002) also sought to strengthen the 'vocational offer' to this age, partly through increasing vocational options at GCSE level and A-level (at the same time abolishing General National Vocational Qualifications), and partly through expanding provision of Modern Apprenticeships. The government's intentions to strengthen programmes of vocational education and training from age 14 to higher education have been re-confirmed in the skills strategy White Paper (DfES 2003b) published in July 2003. Proposals within the skills strategy White Paper also aim to create a demand-led approach to skills training.

Thus we see current government educational policies seeking to redress the balance between academic and vocational qualifications at various levels within the compulsory and post-compulsory education and training systems.

1.2 The study

Beyond the debates about skills deficiencies at particular levels and the impact of such imbalances on the UK's levels of productivity in comparison with its competitors, there remains the question of how the education and training provision leading to high-level vocational qualifications might best be configured to meet the demand for skills linked to associate professional and higher technician occupations.

Moreover, what role does (and could) work-based learning play in meeting employers' needs for such skills?

This six-month study, commissioned by Learning and Skills Development Agency (LSDA), and funded by the Learning and Skills Council (LSC), the Council for Industry and Higher Education (CIHE), the Department for Education and Skills (DfES) and the Higher Education Funding Council for England (HEFCE), sought to explore employers' perceptions of the adequacy of the existing education and training provision in meeting their skills' needs for associated professional and higher technician occupations. At the outset it was agreed the study would be limited to England.

The study aimed to collate employers' views on the value of vocational higher education, and the relative merits of such provision in HE institutions and FE colleges. The study also aimed to consider the role that assessment and accreditation of existing workforce skills at NVQ Levels 3 and 4 might have in meeting employer and employee skill needs, and in meeting the government's target of increasing and widening participation in higher education.

This exploration was qualitative, undertaken through semi-structured interviews with some (mainly large) employers and representative bodies of both large and small employers in particular employment sectors.

A provider perspective was also introduced through interviews with a few career advisers and teaching staff in HE institutions and FE colleges in England, and group discussions with students and employees focused on users' perceptions of employers' needs and preferences in terms of skills and qualifications.

The study also sought to provide a comprehensive map of provision at the vocational HE level within England using existing data sources, and to consider to what extent this provision could be used to help meet government targets in relation to expanding and widening participation in higher education. It should be noted that the term 'vocational higher education' is not widely used in discussions of post-compulsory education and training within the UK: rather, the term

‘intermediate-level qualifications' is arguably more commonly adopted, though even this term is open to a number of interpretations. For example, in his wide-ranging review of the international literature, and explanation of relevant datasets, Robertson concludes that the best definition of an intermediate-level HE qualification should include two key criteria: the qualification must be recognised for progression within higher education and should be independently recognised by employers in the labour market (Robertson 2002, page 4).

For the purposes of this study, we have taken a broad definition of vocational higher education – namely ‘all sub-degree HE provision'. The following chapter on mapping provision explores this definition further.

Chapter 2 Mapping vocational HE provision

2.1 Definitions and scope of mapping work

This was mainly a desk-based exercise, which used several data sources to map provision of vocational higher education (VHE) in the HE sector and learning and skills sector, especially in the context of its role in meeting the needs of the economy, employers and students from non-traditional backgrounds. In addition, some statistics were provided via interviews with professional, sectoral and local bodies.

It would be naïve to assume a perfect match between qualification and occupation, and studies continue to investigate the shifting links between occupational skills mix and qualifications. A recent DfES-funded study of associate professionals in the business and public service sectors of employment identified three broad categories of skills' combinations required by associate professionals. These were characterised as *traditional*: where high-level technical skills, above-average generic skills and well-developed personal attributes were required; *transitional*: where high-level generic skills, well-developed personal attributes and average-level technical skills were required; and *generic*, where high-level generic and personal attributes but lower-than-average technical skills were required (Rogers and Waters 2001).

The Standard Occupational Classification (2000) notes that associate professional and higher technician occupations normally require an associated high-level vocational qualification covering a body of knowledge acquired through a period of post-compulsory education but not at degree level (Elias *et al.* 1999).

Thus, for this mapping exercise we took as our definition of vocational higher education (VHE) **all sub-degree HE provision** (as outlined in the tender specification); in other words, undergraduate-level study not leading to a degree qualification. This is sometimes called 'non-degree' higher education, or 'other undergraduate' study (the latter term is used by Higher Education Statistics Agency, HESA) to distinguish it from first (bachelors) degree programmes. It includes the following:

- HND, HNC, DipHE and CertHE programmes of study
- a range of professional qualifications at undergraduate level (ie at Level 4 in the English National Qualifications Framework), many of which are awarded by professional bodies for membership (eg Chartered Institute of Management Accountants, Chartered Institute of Marketing, Chartered Management Institute), but also including a variety of other qualifications (eg Diploma in Social Work, Certificate of English Language Teaching to Adults) in a range of occupational areas. These mainly come under the heading 'non-prescribed higher education' (NPHE)[1]
- NVQs at Levels 4 and 5 (a relatively small number)
- the recently introduced foundation degrees
- study for other institutional undergraduate credits in HE institutions, which may count towards undergraduate and postgraduate qualifications (including credit accumulation and transfer – CAT – schemes and the Open University awards)
- foundation courses at HE level (known as Year Zero or sometimes referred to as bridging courses to three-year, full-time degree programmes)
- other formal qualifications of less than degree standard.

Some of this provision meets fairly broad needs, eg HNDs in engineering or business areas, while some, especially the NPHE provision, meets very specific needs, eg qualifications to enable individuals to become licensed or members of professional bodies (see Clark 2002), or part of traditional progression routes in certain sectors (eg hospitality). Increasingly, some sub-degree courses are used as part of a progression route to degree programmes (eg HNC/HNDs, foundation courses) in widening the access policies of universities or local consortia of HE providers (under Partnership for Progression arrangements). It is important that this diversity of purpose of the qualifications coming under the umbrella of VHE provision is recognised when looking at aggregate figures.

It should also be noted that although vocational higher education as defined here covers a wide range of provision, this is still not all the 'vocational HE learning' at undergraduate level, since many subjects in bachelor degree programmes are also vocationally orientated, such as engineering, IT, business studies, librarianship, nursing and so on, and so could be counted. However, it is impossible to separate the statistics for first-degree study into vocational and non-vocational learning categories in a meaningful way, and so for the purposes of the mapping work done here, degree study has been excluded (though occasionally referred to for comparative purposes). More importantly, the focus of the overall study was on employers' needs for vocational skills at associate professional and higher technician level – a level that normally requires an associated high-level vocational qualification acquired through post-compulsory education but not at first-degree level.

The scope of the overall study was England: thus the statistics presented here cover England, but occasionally, where separate country information is not disaggregated, we have shown 'all UK'.

We have aimed to standardise the data on one year, 2001/02, which is the most recent year with an optimal amount of data available. Although it would have been interesting to look at trends, the difficulties in analysis put this beyond the scope of this study.

2.2 Data gaps and comparability issues between the HE and learning and skills sectors

We have drawn upon several data sources covering this VHE population[2] Each has a different coverage and uses different definitions. The main ones are the HESA student datasets, which cover HE institutions, and the Individualised Student Record (ISR) held by the Learning and Skills Council, which collects data from FE colleges. There is also data published by the DfES relating to vocational qualifications gained from awarding bodies, such as Edexcel. Our main sources are discussed further in Appendix 1. They tend to have better coverage of the traditional type of sub-degree provision (ie HND/C, DipHE courses), and less data on other programmes, in particular NPHE, or the newer foundation degrees or work-based schemes (such as progression from Advanced Modern Apprenticeships, AMAs).

There are significant gaps in the data available on sub-degree provision, in particular on output and employment destinations, and there are also problems of comparability between the HE and learning and skills sectors. Some of the available data relates only to part of the VHE student population, for example students in HE institutions and not FE colleges, or full-time students only. In particular, employment destination data is currently available only for full-time students from HE institutions, and there is no comparable data for part-time students at HE institutions. There is also very little reliably known about qualifications gained and destinations of VHE students at FE colleges. Where there is data covering both sectors, a major problem arises in deriving aggregate figures for the whole population because of inconsistencies between the two systems of student recording (HESA for HE institutions and ISR for FE colleges).

There is also an issue around franchising and other collaborative arrangements between HE institutions and FE colleges that can lead to some uncertainty on student totals spanning the two sectors. And as there is no national database on students progressing from Level 3 to Level 4 (in particular through work-based or FE routes into HE study), there are also problems in assessing the size of the flow into HE study from different routes.

2.3 Student population

2.3.1 HE sector

In 2001/02, there were 462 500 students (UK domiciled only) enrolled on sub-degree study (ie at 'other undergraduate' level, not degree) in English HE institutions. This represented almost two-fifths (38%) of the 1.2 million English undergraduate population (HESA 2001/02).

Almost half of this sub-degree student population (some 229 000 students) are coded as taking 'institutional undergraduate credit which may count towards postgraduate or undergraduate qualifications'. We have tried to explore the composition of this group to distinguish those that are more relevant to work and employment from others that are taken more for recreational or leisure interests. A large proportion are likely to be Open University (OU) students taking modules counting towards degrees, approximately 95 000 – these students are not counted as first-degree students by HESA. The rest are made up of other part-time students taking accredited courses of various kinds at HE institutions, leading to degree and other undergraduate qualifications. Almost all these students on 'institutional u/g credit' programmes are in part-time study (and most are likely to be studying at a 'distance', see Table 1). Unfortunately, over two-thirds of them are classified in 'combined/invalid' subject codes. The largest single identified subject group is 'subjects allied to medicine' (almost 13%), followed by languages (4%) and humanities (3%) (Appendix 2, Table A1). Separate data from the Open University, however, shows, a wide range of subject areas being taken by their undergraduate-level students, the three main ones being biological and physical sciences, business, administrative studies and law, and social, economic and political studies (each over 10 000).

The other half of the sub-degree students in HE institutions (234 000) were enrolled on various diplomas and certificate programmes (as shown in Table 1). The largest single groups were DipHE students (almost 53 000) and HND (37 000). Relatively few were on foundation degrees (just under 3000): these numbers have since expanded to an estimated 12 000 in 2002/03.

It is worth pointing out that some students reported by HE institutions in their student returns to HESA will be located at FE colleges under a franchise arrangement. This applies especially to HNC/HND and foundation-degree students. (See Table 3 on location of study for details.)

Table 1: Numbers of students on undergraduate-level programmes, 2001/02, at English HE institutions, UK domiciled, by qualification aim and mode of study

Qualification aim	Full-time and sandwich (%)	Part-time and other (%)	All
Diploma of Higher Education (DipHE)	41 223 (78.2)	11 476 (21.8)	52 699
Certificate of Higher Education (CertHE)	898 (3.9)	22 088 (96.1)	22 986
Higher National Diploma (HND)	32 828 (87.9)	4481 (12.0)	37 309
Higher National Certificate (HNC)	213 (1.6)	12 936 (98.3)	13 149
Professional qualifications at u/g level	564 (3.3)	16 072 (96.6)	16 636
Foundation degree (FD)	1632 (58.4)	1159 (41.5)	2791
Post-degree diplomas/certificates at u/g level	387 (24.7)	1177 (75.2)	1564
Other u/g diplomas and certificates	10 504 (14.3)	62 816 (85.6)	73 320
Foundation courses at HE level (eg Yr 0 of degree)	1171 (32.6)	2416 (67.3)	3587
Institutional u/g credit which may count towards u/g or p/g qualifications (includes CAT schemes)	701 (0.3)	227 956 (99.7)	228 657
Other u/g HE (including other formal HE qualifications of less than degree standard, qualified teacher status only, no formal u/g qualifications)	532 (5.4)	9292 (94.6)	9824
TOTAL sub-degree	**90 653 (19.5)**	**371 869 (80.5)**	**462 522**
Total first degree	**675 981 (89.2)**	**81 422 (10.8)**	**757 403**
Total undergraduate level	**766 634 (62.8)**	**453 291 (37.2)**	**1 219 925**

Source: HESA student record 2001/02

Mode of study

Most sub-degree students (80%) are part-time or studying by open or distance learning mode. This applies especially to HNC and CertHE students and those taking professional qualifications and 'institutional credit' programmes of study, where the percentages in part-time/distance study are over 95%. By contrast, DipHE and HND qualifications are taken mostly on a full-time basis (only 22% and 12% respectively for part-time and other modes). Foundation-degree students are split more evenly between full-time and part-time.

By comparison, first-degree students in HE institutions are predominantly full-time (89%).

Subject

Overall, the main subjects taken by sub-degree students aiming for a qualification (ie excluding those on institutional u/g credit programmes of study because such a large number are combined or invalid codes) are:

- allied to medicine (33.1%)
- business and administrative studies (12.6%)
- social, economic, political studies (8.2%), computer science (7.5%), education (6.4 %) and engineering and technology (4.2%).

This subject distribution is different from that of degree study. In particular, sub-degree students are more likely than degree students to be taking 'subjects allied to medicine': 33.1% compared with only 8.7% of degree students, and also numerically larger, 72 000 sub-degree compared with 58 500 degree. Sub-degree students are also slightly more likely to be in education and business and administrative studies. (See Appendix 2, Table A1 for details.)

However, the dominance of 'subjects allied to medicine' masks some of the patterns in the data. If they are excluded from both totals, then it is clearer that sub-degree students are more likely to be taking business, computer science, education, agriculture and social studies than first-degree students, and less likely to be in languages, creative arts and design, physical sciences and humanities, while other subjects show similarities (see Table 2).

Table 2: Subject distribution of sub-degree (excluding u/g credit) and degree students at English HE institutions, 2001/02 (percentages based on totals excluding 'subjects allied to medicine')

Subject	Sub-degree (%)	Degree (%)
Computer science	16 398 (11.2)	51 534 (8.4)
Business and administrative studies	27 549 (18.9)	77 790 (12.7)
Engineering and technology	9215 (6.3)	38 152 (6.2)
Architecture, planning, building	4156 (2.8)	15 769 (2.6)
Social, economic and political studies	17 901 (12.3)	61 417 (10.0)
Creative arts and design	7292 (5.0)	68 824 (11.2)
Education	13 972 (9.6)	13 953 (2.3)
Biological sciences	2089 (1.4)	48 118 (7.8)
Agriculture and related	3095 (2.1)	5469 (0.9)
Physical sciences	2324 (1.6)	26 959 (4.4)
Humanities	5111 (3.5)	27 662 (4.5)
Languages	5292 (3.6)	45 685 (7.4)
Total (all subjects except 'subjects allied to medicine')	146 094 (100%)	614 163 (100%)
Subjects allied to medicine	72 210	58 502

Source: HESA 2001/02

NB small subjects at sub-degree not shown, see full subject list at Table A1 in Appendix 2

Looking more closely at the individual qualifications, it is clear that there is considerable subject diversity between qualification groups, with some subjects more likely to be represented in some qualifications than others (shown in more detail in Appendix 2, Table A1):

- **professional qualifications**: 55% in business and administrative studies and a further 27% in 'subjects allied to medicine'
- **diploma of HE**: 86% in 'subjects allied to medicine' (likely to be mainly student nurses)
- **HND**: 26% studying computer science, and another 26% business and administrative studies; 12% each in engineering and technology, and creative art and design
- **HNC**: 31% engineering, 19% business and administrative studies, 18% computer science and 15% architecture, building and planning

- **certificate of HE:** 52% of total in combined/invalid subject codes; 14% in education, 11% in subjects allied to medicine, and 7% in social, economic and political science

- **foundation degrees:** 24% in education**,** 16% in business and administrative studies, 15% in creative arts

- **other u/g diploma and certificates**: 26% in 'subjects allied to medicine', 13% in social, economic and political science, 10% in education.

Location

As mentioned above, not all students are located at the institution that reports them to HESA. They can be studying, for at least part of their course, at another HE institution or an FE college, on an industrial placement, at a distance from home or in the workplace. The extent to which they are located on a campus of one HE institution varies by type of programme (see Table 3).

It is more common for foundation-degree and HNC/D students to be on collaborative or franchised courses at more than one institution (commonly an FE and HE collaboration or franchise) than other students. There is also a high proportion (two-thirds) of students on 'institutional credit' programmes in distance learning; while most students on professional courses – DipHE, CertHE, and 'other u/g dip/cert' programmes – are studying at one HE institution.

Table 3: Location of study for sub-degree students, 2001/02, reported by English HE institutions to HESA (percentages)

	Qualification aim of programme								
	Professional qualification	DipHE	CertHE	Foundation degree	HND	HNC	Other u/g dipl or cert	Foundation course (HE level)	Inst u/g credit
At this HE institution only (any campus or site)	95	94	88	65	59	39	90	85	35
At this HE institution and another HE institution or FE college(collaborative/ franchised)	2	2	7	35	38	59	5	9	..
On industrial or other placement for whole or part of year	0	2	..	..	2	..	0	0	0
Distance learning – UK based	2	2	5	0	0	2	5	6	61
Other/unknown	1	..	..	..	1	0	..	0	4
Total (n)	16 050	52 699	22 986	2791	37 309	13 149	73 320	3587	228 657

Source: HESA, 2001/02

There are also some geographical variations. Some types of courses appear to be more popular in some regions than others. Courses with professional qualification aims are more likely to be taken by students from the West Midlands and London than other regions, while DipHE programmes are more popular with people in Merseyside than the East Midlands and Yorkshire,

and Cert HE programmes are more popular in the South East and Yorkshire (see Appendix 2, Table A2). These variations are likely to be due to a combination of local factors relating to historical development, institutional provision and employment demand.

Student profiles

There are marked variations in the student composition of the different qualification groups, in terms of gender, age and ethnicity. This can be seen in Table 4, which summarises data broken down by selected student characteristics. In particular, mature students are more likely to be studying for sub-degree than degree qualifications. The variations by qualification are likely to relate in part to subject preferences of different groups of students (eg more male students choosing engineering and IT which are more likely to be HNDs; more female students taking nursing qualifications and DipHEs).

The main points to note are:

- **By gender**: Just over half of the total sub-degree population in HE institutions (including those taking institutional u/g credits) is female (57%). This compares with a similar female proportion on degree study (54%). However, most of the students on DipHE programmes are female (85%) – probably because they are mainly in nurse education, while only around a third of HND and HNC students are female (reflecting these qualifications' stronger presence in engineering and computer science, both male-dominated disciplines).

- **By ethnicity**: around 10% of sub-degree students come from an ethnic minority background, but this increases to a little over 15% if the many students taking institutional u/g credits are excluded, as that percentage is just 8% (this is likely to be because the latter tend to be older, see Table 4). The proportion with an ethnic minority background varies from 25% on foundation courses, 26% on HNDs and 20% on professional qualifications to just 5% on CertHE programmes. The ethnic minority representation on first-degree courses is slightly higher (20%) than the sub-degree average.

- **By age**: Overall, just 9% of sub-degree students are aged 16–18 and a further 23% are aged 19–20, while almost two-thirds (64%) are aged 30 or over. (This is a much older age profile than found among first-degree students, where 13% are aged 30 or over). An even higher age profile is found among students taking 'institutional credits at u/g level'. The small numbers taking NVQ Levels 4 and 5 are also mainly over 30 (over 81%). The youngest group, on average, are HND students (88% aged under 30), including almost 60% under 21.

Table 4: Student characteristics: percentages of female, ethnic minority and students aged under 30, in each qualification group, 2001/02, HE institutions

Qualification	% female	% ethnic minority	% aged under 30 years
Professional qualifications	68	20	44
Foundation degree	59	19	63
DipHE	85	17	51
Cert HE	66	5	23
HND	38	26	88
HNC	34	10	58
NVQ 4/5	61	4	19
Other u/g diplomas and certs	70	10	34
Foundation courses	59	25	61
Inst u/g credit	63	8	25
All sub-degree	**57**	**10**	**36**
All degree	54	20	87

Source: HESA 2001/02

Trends

According to HESA and the Ramsden Report (Ramsden 2001), the number of HNC/HND enrolments has been declining through the late 1990s, balanced to some extent by an increase in DipHE and CertHE students (partly as a result of the changes to nursing education and its absorption within higher education), and more recently by the introduction of the new foundation degrees. It is also worth noting that there are higher concentrations of sub-degree students, especially part-time students, in the post-1992 universities.

2.3.2 Learning and skills sector

In addition to these students reported by HE institutions, there were around 148 000 enrolments at FE colleges in 2001/02 in England at Levels 4 and 5 and higher education (according to the ISR). This included just over 16 000 enrolments on degree courses, and so around 132 000 enrolments are on sub-degree courses (ie our defined population, see Section 1). In contrast to the HE sector above, these sub-degree enrolments represent a very small proportion (just over 3%) of the total enrolments in the learning and skills sector in England (four million). However, as the sub-degree students in this sector tend to be concentrated in relatively few colleges (the larger, mixed-economy group), they generally represent a much higher proportion than this average at certain colleges.

The total number of Levels 4 and 5 and HE students at FE colleges is slightly lower than the total enrolments (as some students enrol on more than one programme). In total, there were 123 000 students taking sub-degree qualifications (ie excluding 16 000 taking degrees) in 2001/02. They were spread across a very wide range of qualifications. There are three main groups: HND (22%), HNC (25%) and NVQ (18%), with the rest covering other qualifications. A few foundation-degree enrolments (211) are included in this 'other qualification' group.

In total, 1150 separate qualifications are listed in the ISR dataset for students at Levels 4 and 5 and higher education, and over 600 are *not* HNC, HND, DipHEs or degrees but come under the

heading of non-prescribed higher education (NPHE). These include professional qualifications (eg ACCA, BCS, FCIS), a range of NVQs, and a number of less well-known certificates and diplomas in, for example, youth and community work, transport, English language proficiency, care. In total, there were 64 600 students on programmes that broadly fall under the NPHE heading (ie. NVQ, City & Guild and other qualifications) in 2001/02 on the ISR database, which is similar to the estimate of 60,000 given in the LSDA report (Clark 2002) on NPHE. (Note: we did not have access to the database used by Clark and so could not make a direct comparison; it is likely we may have a few 'rogue' qualifications included under the 'other' heading in our dataset which should be classified in HEFCE's 'prescribed' higher education group).

The main sub-degree qualifications on the ISR database (ie those with at least 500 students in 2001/02) are listed in Appendix 2, Table A3.

- The largest individual programmes are in business/finance – NVQ Accounting (with 8456 students), NVQ Management (5233), HNC Business (2671), HNC Business and Finance (2215), Advanced Certificate in Marketing (2077).

- There are other HNCs, each with around 2000 or more students: Building Studies, Computing and Engineering (Electrical/Electronic), and also HND Computing (1614).

- Others with substantial numbers include: NVQ Care (2706), Certificate in English Language Teaching (1384), Advanced Diploma Child Care and Education (1007), University Certificate in education (1075) and a qualification entitled Graduateship (2842).

- The 211 foundation degree (FD) enrolments represent seven programmes in different areas (eg business, media, engineering, environmental studies).

Mode of study

As in the HE sector, most sub-degree enrolments in FE colleges are on part-time or other modes; only just over a quarter (28%) in 2001/02 were full-time students, with the rest enrolled on programmes taken by various part-time and distance learning modes (Table 5). By comparison, those taking degrees at FE colleges are more likely to be enrolled full-time (57% of degree students at FE colleges were studying full-time), though they are less likely to be in full-time study than their counterparts at HE institutions (see above).

Table 5: Numbers of sub-degree students (ie at Levels 4 and 5 and higher education, excluding degree), at FE colleges in England, 2001/02, by qualification group and mode of study

Qualification group	Full-time (%)	Part-time/other (%)	All
HNC	3596 (11.5)	27 560 (88.5)	31 156
HND	21 800 (79.5)	5611 (20.5)	27 411
NVQ	2145 (9.1)	21 409 (90.9)	23 554
C&G	531 (22.7)	1809 (77.3)	2340
DipHE	491 (33.5)	974 (66.5)	1465
Other	7918 (17.2)	37 871 (82.7)	45 789
All sub degree	**36 481 (27.7)**	**95 234 (72.3)**	**131 715**
Degree	9272 (57.2)	6945 (42.8)	16 217

Source: ISR 2001/02

As Table 5 shows, a varied pattern by qualification and mode can be seen in the learning and skills sector, similar to that seen in the HE sector. Here too the main full-time enrolments are HNDs (in fact they represent over half of all full-time enrolments on sub-degree programmes at FE colleges) while others are more likely to be part-time, in particular NVQs and HNCs, and also the 'other' group of qualifications, which are predominantly taken part-time.

Subject

Overall, the largest programme area (ie broad subject) by far for sub-degree enrolments at FE colleges is business (51 000 enrolments). Next comes engineering (17 000), followed by humanities (16 000) and then health and community care, and art and design (12 000 each) and sciences (11 000). Slightly smaller programme areas are construction (6000) and hotel and catering (4000).

There are significant differences by qualification type, which illustrate the greater importance of some qualifications to certain sectors. Almost half the enrolments in business, and slightly less than half of the health and community care programme areas, and two-thirds of the students in humanities, are in the 'other' qualifications group. This contrasts with the engineering area where just over half the enrolments are on HNCs, while in hotel and catering, and art and design over two-thirds are taking HNDs. (Further details of subject by main qualification are shown in Appendix 2, Table A4).

The LSDA report on NPHE (Clark 2002) found that in 2000/01 60% of students were studying for qualifications in the business area, with the largest concentrations in finance, accounting and management. This is similar to our findings (see Appendix 2, Table A4), where it is 55% for the NVQ and other groups combined which broadly equates to NPHE. The next comparable groupings in the LSDA report were education and training, and care and community, which were followed by construction, manufacturing, counselling, Early Years/nursery and foreign languages. Lastly, there were a number of very small niche qualifications (eg in journalism, optical dispensing, quality assurance).

Location

Sub-degree students at FE colleges are spread widely across the geographical regions of England. The main concentrations are in the North West (19% of the total), West Midlands (14%), Greater London (13%) Yorkshire and Humberside (12%) and the South East (10%). Most students taking sub-degree qualifications at FE colleges study in their region of domicile. (In most regions over 85% have their home and institution in the same region, as shown in Appendix 2, Table A5).

Student profiles

The sub-degree students at FE colleges also display different demographic profiles according to qualification group, as was shown for students at HE institutions. The main points of note (shown in Table 6) are:

- **By gender**: overall, 52% are female. However, there is a bias towards men among HNC (65% male) and HND students (59% male) while NVQ and other qualifications have more female than male students (both 64% female). The highest female percentage is among DipHE students (at 85%).

- **By ethnicity**: Approximately 10% are from an ethnic minority group (ie percentage based on total excluding 'unknown'). Around 4% are Black and 6% are Asian. The largest individual minority group is Indian, 2.5% (as it is in the HEI student population). A

higher than average proportion of ethnic minority students are on HND (18%) and DipHE (16%) courses.

- **By age**: A relatively high proportion of students are mature students – only 36% are aged under 30. HND students, and also HNC and C&G students, are younger on average. By contrast, DipHE and NVQ students are older. As in HE institutions, degree students in FE colleges tend to be much younger than sub-degree students.

Table 6: Student characteristics: percentages of female, ethnic minority and students aged under 30 in each qualification group, FE colleges, 2001/02

Qualification	% female	% ethnic minority (excluding unknowns)	% aged under 30 years
C&G	26	7	55
DipHE	85	16	27
HNC	35	10	58
HND	41	18	84
NVQ	64	8	31
Other u/g diplomas and certs	64	10	41
All sub-degree	**52**	**10**	**36**
All degree	62	15	68

Source: ISR 2001/02

2.3.3 Aggregate picture – HE and learning and skills sectors

Care needs to be taken in estimating the overall population figure, in particular combining data from the HESA and ISR systems; and there are also some uncertainties with 'counting' franchised students and NPHE students because of the way they are recorded in the two systems. But taking the estimates from the HE and learning and skills sectors together, it seems likely that the total number of students at sub-degree level in England was in the region of 600 000 in 2001/02. If those on 'institutional undergraduate credit programmes' in HE institutions are excluded from this total, this reduces to around 400 000 students aiming for a sub-degree qualification. This is very similar to the Parry and Thompson (2002) estimate of 393 000 students overall on sub-degree programmes in 1998/99, in all institutions in England. It should be borne in mind that this really is only a 'best estimate' because of the data problems highlighted above. It is clear, though, that the learning and skills sector makes a substantial contribution to overall sub-degree provision, of about 30% of the total.

Comparing the two sectors, it can be seen that:

- most HE-level study delivered in FE colleges is at sub-degree level with only a little at first degree (though there are more located in FE colleges but franchised to HE institutions and so included in the HE institutions figure)

- by contrast, in the HE sector less than one-third (31%) of total HE provision is at sub-degree level.

It is also worth noting that most study at sub-degree level is part-time or by other modes, and this applies in both the learning and skills and HE sectors; but that for certain qualifications (eg HNDs and DipHEs), study is mostly on a full-time basis, regardless of sector.

2.3.4 Student numbers on HNC and HND programmes

A further insight into the distribution of HNC and HND students can be seen in the Edexcel data covering registrations. This shows that 77 000 were registered on BTEC HNCs and HNDs in 2001. Earlier years' analyses suggest that around half were in the learning and skills sector and slightly less than half in the HE sector, with a few – 4% – elsewhere (around 3000 students). We could not get a more up-to-date breakdown.

The data shown above for the two sectors from HESA and ISR data sources gives a slightly lower figure in total (63 500 for 2001/02), with slightly more in the HE than in the learning and skills sector. But the difference is not significant and likely to be due to differences in counting students, eg between enrolments and registrations, and also the effect of the introduction of the new foundation degrees (which have taken the place of some HNDs).

2.3.5 Other specific programmes

We investigated the availability of separate data on Graduate Apprenticeships (GAs).[3] Around 30 HE institutions are involved in this initiative and more than 3000 GA students are reported to be taking part (according to the University Vocational Awards Council, UVAC), 1000 of whom are in IT/computer science. As far as we understand the situation, they are all taking degrees, and so fall outside the remit of this mapping exercise.

2.4 Awards and qualifications

We now turn to looking at output, in terms of completions and awards. Data on the two sectors is once again presented separately because different sources that are not directly comparable have been used. Here, though, there is comparatively more reliable information available on qualifiers from the HE sector than the learning and skills sector.

2.4.1 HE sector

A total of 73 000 students (UK domiciled) qualified with sub-degree awards in 2001/02 from HE institutions in England. This compares with a total of almost 365 000 awards made at all levels, and 195 000 degree awards. Thus, those gaining sub-degree qualifications represent around a quarter (27%) of all undergraduate level awards made by HE institutions.

Of the total sub-degree awards, a little over 60% were made to part-time students:

- **DipHEs** are the largest group of sub-degree awards (16 000). However, over three-quarters of them are in 'subjects allied to medicine', and within that group, mainly in nursing. (In fact the largest *single* subject overall is nursing.)

- **HNDs** make up the next largest group of qualifications (11 000), while **HNCs** account for 4000, and **professional qualifications** at u/g level account for 3500. These cover a slightly wider range than the DipHEs but still tend to be clustered around a few subjects. Business and administrative studies, computer science and creative arts and design feature strongly in HND awards, while engineering, business and administrative studies and computer science are the main subjects for HNC awards. Business and administrative studies and 'subjects allied to medicine' dominate the professional qualifications group.
- The rest (some 30 000) comprise a variety of **other types of qualifications**. A very few NVQ awards, only 66 NVQ Level 5 and 7 NVQ Level 4, were made by HE institutions.

Further details of the subject breakdowns of the main qualification groups are shown in Appendix 2, Table A6. Looking at individual subjects:

- 'subjects allied to medicine', with 22 400 awards, is the largest subject group by far; they comprise a large group of DipHEs, plus many 'other u/g certs and diplomas'

- business and administrative studies (6900 awards) has a different profile – almost half (3000) are HNDs, and a further 1000 are professional qualifications

- education (5500 awards), has a different qualification profile again – over half are other u/g certificates and diplomas

- computer science (4700 awards) comes next and half of them are HNDs (2400)

- social, economic and political studies (4500 awards), comprises about one-third each of DipHE (1600) and other u/g certificates and diplomas (1800)

- engineering and technology (3500 awards), is also largely made up of HND and HNC (about one-third each, 1300 and 1100 respectively).

There are distinct differences in the subject distribution between sub-degree and first-degree qualifiers (see Table 7). The main difference is the much greater concentration of 'subjects allied to medicine' in sub-degree output (also highlighted earlier in the student enrolment data, see Section 2.3.1). Sub-degree qualifiers are also more likely to have taken education and computer science than first-degree graduates. First-degree graduates are spread more widely across subject areas. If 'subjects allied to medicine' is removed from totals, it has the same effect as in Table 2, increasing the clustering of sub-degree qualifiers in the subjects shown in Table 7, while having minimal effect on the first-degree graduate distribution.

Table 7: Main subject of sub-degree qualifiers and first-degree graduates, HE institutions, 2001/02 (column percentages)

Subject area	Sub-degree %	Degree %
Subjects allied to medicine	32	8
Business and administrative studies	10	11
Education	8	5
Computer science	7	5
Engineering and technology	5	6
Social, economic and political studies	6	9
Creative arts and design	4	9
Combined/invalid	19	15
The rest	9	32
N (100%)	72 700	195 000

Source: HESA qualifiers 2001/02

NB: Subjects of sub-degree graduates representing less than 4% of total not shown (see more details in Appendix 2, Table A6)

As might be expected from the student data discussed (see Section 2.3.1), most qualifiers from full-time courses obtained HND or DipHEs, while most part-time students obtained professional qualifications or other u/g certificates or diplomas.

Women outnumber men in obtaining sub-degree qualifications almost two to one (partly a reflection of the inclusion of nursing but also because of female biases in other subjects, such as education, business and social studies). However, men outnumber women in computer science and engineering HND and HNC awards (again following the general pattern in these discipline areas).

OU undergraduate qualifiers are included in the HESA data above, but it is useful to look at their qualifications separately because they are all taken by part-time/distance mode, and the Open University has a different student market (students tend to be older). Their data shows that:

- the total qualifying with undergraduate certificates and diplomas has been increasing over time, to 16 000 in 2001/02 compared with just under 6000 in 1997/98.

- a wide range of sectors/subject areas are represented, in particular: social sciences (3000), health and social care (2000), computing and natural sciences (both around 1000).

- 5000 obtained BA or BSc degrees, around 3000 obtained certificates in social sciences, 1600 certificates in health and social care, 100 each diplomas in computing and in natural sciences and professional certificates in management, and the rest in a wide range of subject areas (including languages, humanities, design and environment).

2.4.2 Learning and skills sector

A total of 67 000 enrolments at Levels 4 and 5 and higher education in FE colleges in England completed the learning activity relating to the qualification aim in 2001/02, according to the ISR database. This included around 5500 on degree programmes. The ISR data field is 'completion status' and not 'qualifying status', ie it does not tell us how many awards were actually made at this level, but it is likely to be close to the number of completers. Thus, around 61,500 enrolments on sub-degree programmes completed the learning activities in 2001/02. This represents around half of the total enrolments in 2001/02.

Looking at individual qualification aims, the three largest groups were:

- 12 004 on HNC

- 10 247 on HND

- 12 116 on NVQ.

Much smaller numbers were on DipHE (226) and C&G (1710).

The rest, just over 26 000, were on programmes with other qualification aims (not specified separately in the ISR dataset, but including many of the professional qualifications discussed in Section 2.3.2, and shown in Appendix 2, Table A4).

Although the data from the two sectors is not directly comparable, it does suggest that the output from each at sub-degree level is broadly comparable in size (61 500 from FE colleges and 73 000 from HE institutions), producing a total of some 135,000 or so annually. (Note: this figure should be treated with caution because it is an estimated total.) However, as shown from the student data, the composition of each sector's output, in terms of mode, qualification, subject and personal characteristics, is different.

2.4.3 Higher level vocational awards

There is limited use that can be made of other data sources, but the following provide some further information about vocational awards at HE levels.

- Data from Edexcel on HND and HNC completions for 1997/98 (somewhat old now but the latest year provided) shows a similar subject distribution to the HESA data. The largest group are from 'business' (30% of the total of 27 700 that year), followed by engineering (21%), and art and design (11%) and IT (10%). Others (with relatively small numbers in total) were construction, health and social care, science, leisure and tourism, and media communications.

- Data on vocational awards is published annually by the DfES, from the national database on vocational qualifications. In 2001/02, around 16,000 awards were made at Levels 4 and 5, representing only around 4% of the total of 408,000 NVQ and Scottish Vocational Qualification (SVQ) awards made that year. Awards at Levels 4 and 5 have been slowly increasing, from 8600 in 1996/97. Because of the small numbers, however, very limited analysis is possible for Levels 4 and 5 compared to that for lower levels of NVQs and SVQs.

The learning and skills sector assesses around half of all NVQ Levels 4 and 5 awards, with the rest assessed mainly by private training providers and employers; it is also by far the main assessment centre for other VQ awards.

By subject, most (two-thirds) of NVQ Levels 4 and 5 are in business/management/office studies. Other subjects featuring strongly are 'health care/medicine/health', 'safety', education' and 'services to industry'. Looking at the breakdown by NVQ framework area, the main one represented at Level 4 and above is 'Providing business services'.

The DfES data on vocational qualifications also shows a number of 'other VQ awards' at Levels 4 and 5: in engineering (around one-third of total), business/management/office studies (around one-sixth) and IT, construction, and family care/personal development (each around a tenth).

2.5 Employment destinations of sub-degree qualifiers from HE institutions and FE colleges

The only reliable data on the initial destinations of sub-degree students relates to those who qualified from full-time study at HE institutions, and is provided by the HESA First Destinations Survey (FDS) of graduates. There is no comparable HESA data currently available on students qualifying from part-time courses (though they will be included next year in a new survey). There is destinations data on 'completers' at FE colleges on the ISR database but it is not reliable enough to use because 60% are unknowns. Moreover, as most sub-degree students in HE institutions are studying part-time (see Section 2.3.1), the data we have available provides only a very partial assessment of employment demand for people qualified at sub-degree level. Furthermore, the FDS data provides only a 'snapshot' measure of initial employability (six months after completing courses), and some students take more time than others to make a successful transition to the labour market.

However, despite its limitations, it does provide data separately for degree and other undergraduate qualifiers, ie those gaining sub-degree qualifications. The latter are predominantly DipHEs, HNDs (because the FDS only covers full-time students), with only a few students with other diplomas and certificates likely to be present.

The HESA FDS data shows, that for those qualifying in 2000/01 (latest year available at time of writing), there were just over 20 000 full-time qualifiers with sub-degree qualifications with a known destination (UK-domiciled only). Of this total:

- just over half (11 500) went into employment – either starting a new job with a new employer (40%) or staying with/returning to a previous employer (16%)
- a further third (34%) went on to further study, mostly transferring to degree courses
- only just over 3% were unemployed
- the rest (7%) were spread across several other activities (including going abroad and professional training).

By comparison, there were 176 000 full-time degree graduates with a known destination (UK domiciled), of whom 65% went into employment, 19% went on to further study or training and 6% were unemployed.

Table 8: Initial destinations of qualifiers from full-time sub-degree courses at HE institutions (UK 2000/01) Percentages in each main subject group (row percentages)

Subject	UK employment (including self employment)	Transfer to first degree	Unemployed	Other*	Total numbers (known destination)
Subjects allied to medicine	91	5	1	4	*7720*
Computer science	29	58	6	7	*2145*
Engineering and technology	37	47	6	9	*925*
Agriculture and related subjects	43	45	5	7	*890*
Social/ economic/ political science	65	27	3	5	*1095*
Business studies	25	67	3	5	*3340*
Creative arts	36	46	8	10	*1455*
Others (including combined)	38	48	4	10	*2565*
All subjects	**56**	**34**	**3**	**7**	***20 135***

**various other activities eg working abroad, professional training, pg study, not available for work/training*

Source: HESA 2000/01

The destination pattern of sub-degree qualifiers varies significantly between different subject groups, as Table 8 shows (note: only the larger subject groups have been shown). In particular, in some subjects, for example computer science and business studies, a much higher proportion choose to transfer to a first degree than to go into the labour market. It also shows higher average initial unemployment levels for qualifiers from creative arts (8%) and computer science and engineering (6% each). This destination pattern suggests a possible lower employer demand for sub-degree qualifications in some subjects than others.

Transferring to degree courses after completion of HNDs or HNCs is an increasingly common route, as shown by other research. For example, the HEFCE report on progression of HND/HNC students to degree courses identified several different types of progression arrangements, with different degrees of 'smoothness' of transfer, but also considerable variation between institutions and subject areas. The most common type of progression in HE institutions was where students went on to a named or linked degree course at the same institution. FE colleges generally had more varied progression arrangements than HE institutions. Most full-

time HNDs progressed to the second year of a full-time degree, though progression to the third year was also a popular option (HEFCE 2002).

Included in that report also (Annex 7), is data from the foundation-degree support team which shows that 86% of foundation-degree programmes in 2002 provided a progression route to honours degree, including 47% to just one specified honours degree. The majority of FD programme providers (58%) estimated that more than half of their foundation-degree students would progress to an honours degree. This was considered more likely among full-time students.

Again the effect of including nursing qualifications needs to be noted. A substantial proportion of the 11 500 full-time, sub-degree qualifiers who went into employment after completing their course (some 7000) were studying 'subjects allied to medicine', including a large number of nursing students from DipHE courses. Almost all of them went into the health and social work sector (97%). If the students from 'subjects allied to medicine' are excluded from the total entering employment (leaving some 4500), the proportion going into the health and social work sector falls to 16%, and a more even pattern across other employment sectors is produced. In particular:

- manufacturing recruits around 7% of this employed total, with construction a further 2%
- the retail sector recruits 15%, hotels and restaurants a further 6% and transport 5%
- financial services recruit 5% and a further 12% go into other business services
- public administration recruits 11% and education 5%
- other community, social and personal services recruit 8%.

Looking specifically at the engineering sub-degree qualifiers entering employment, the manufacturing sector recruits around one-fifth, with the rest spread across other sectors; and of the computer science students, just under a third are recruited to the business services sector. Business sub-degree qualifiers entering employment are mainly recruited to retail, hotels, financial and other business services.

Of those who returned to or remained with a previous employer, only a small proportion – around 20% – had been financially supported by the employer on their course, but many of these are likely to be nurses from DipHEs going into NHS employment (and being supported by NHS Trusts).

A limited amount of information on occupational levels comes from the FDS return and is shown in Table 9. When all sub-degree qualifiers are compared with first-degree graduates, there is a clear difference in the pattern of occupational levels, in particular the clustering in associate professional and technical-level occupations of sub-degree qualifiers. This is due largely to the predominance of nursing students; when they are removed and the percentage re-worked (on totals minus the subject category 'subjects allied to medicine'), the initial employment pattern of first-degree graduates and sub-degree qualifiers is very similar. This suggests that many sub-degree qualifiers enter similar types of jobs to first-degree graduates (at least in the first few months after qualifying), and a measure of substitution exists. However, this FDS data only applies to full-time students from HE institutions (who represent a relatively small proportion of the total).

Table 9: Main occupational grouping of those entering employment in UK, 2000/01. Row percentages (full-time students from HE institutions)

	Managers/ administrators	Professional	Associate professional/ technical	Clerical/ secretarial	Other
Sub-degree, all (N =11 500)	7	7	69	5	13
Sub-degree, excl subjects allied to medicine (N = 4400)	17	18	23	14	28
First degree, all (N = 119 000)	17	27	21	17	18

Source: HESA FDS, 2000/01

2.6 Qualifications of the workforce

It is also possible to get an insight into employment demand for sub-degree qualifications from the Labour Force Survey (LFS), by looking at the distribution of people in the workforce with these qualifications. However, this will include all such people, including some who qualified a while ago. Because sample sizes are relatively small it is not possible to look only at younger people or the more recently qualified separately. The LFS data for 2001 (Appendix 2, Table A7) shows the following trends.

- Around 5% of the 16–64 population hold a sub-degree qualification (ie at NVQ Levels 4/HND/DipHE) as their highest qualification. This compares with 18%, with first or higher degrees.

- At sectoral level, there are some concentrations of sub-degree qualified people, with higher representations of this group in mining and quarrying, and electricity, gas and water supply (over 10%). By contrast, in retail and hotels or restaurant sectors this drops to below 4% (but these are sectors which also have a lower than average representation of degree-qualified people).

- Sectors where sub-degree qualified people are more likely to be found, relative to degree graduates, are: most industrial sectors, especially agriculture, electricity, gas and water, and construction; and in the services sector, hotels and restaurants. This would suggest that these sectors have higher demand for such qualifications (or traditionally have done).

2.7 Summary

It is likely that around half a million students are studying on sub-degree level programmes in HE institutions in England, with a further 130 000 enrolments in FE colleges.

This mapping exercise explored the size and nature of sub-degree provision and output in both the HE and learning and skills sectors. The main points follow in summary.

- In the HE sector, sub-degree students represent almost two-fifths (38%) of all undergraduates, while in the learning and skills sector they represent just 3% of overall enrolments (but a higher proportion in certain, mainly large colleges). In the HE sector they are much more likely to be at post-1992 universities.

- Most higher education in the learning and skills sector is at sub-degree level, while in the HE sector, it accounts for less than one-third (31%) of all HE provision.

- Most sub-degree students (over 70%) in both sectors are studying part-time or in other distance/open learning modes. Only on DipHE and HND programmes are there a majority of full-time students.

- This area is characterised by the variety of qualifications in both sectors. Many of the sub-degree students in the HE sector (over 200 000), are on programmes leading to 'institutional undergraduate credits which may count towards u/g or p/g qualifications'. This includes around 95 000 OU students in a range of subjects, plus other students many of whom are also on distance learning programmes. The rest, 230 000 students, are on a variety of programmes at HE institutions leading directly to a HND, HNC, DipHE, CertHE, professional or other qualification at undergraduate level. In the learning and skills sector too a wide range of qualification groups is evident. Just under half of the total enrolments (around 60 000) are taking NVQ and other qualifications (which fall under the heading of 'non-prescribed higher education').

- Relatively few (just under 3000) were on foundation degrees at HE institutions, plus 200 at FE colleges in 2001/02, and so comparatively little separate analysis has been done of them. (These numbers have since expanded to an estimated 12 000 in 2002/03.)

- Overall, HNC/HND numbers have been declining for much of the last decade, but DipHE/Cert HE growing (partly because of new nursing contracts in HE institutions).

- Apart from 'subjects allied to medicine' which form a large part of sub-degree provision (mostly nursing students but also some care and other health-related areas), the other main subjects are business, computer science, engineering and social, political and economic studies. The subject distribution in sub-degree provision is more concentrated in fewer subject areas than first-degree provision. However, the subject pattern varies considerably within sub-degree provision according to qualification type.

- There are also different gender, age and ethnic patterns between sub-degree and first degree, and between different sub-degree qualifications (caused to some extent by the subject pattern). In particular, there are substantial numbers of older students, ie over 30, in both the HE and learning and skills sectors, and variations in the ethnic make-up of different qualification groups.

- It is estimated that around 135 000 students qualify annually with sub-degree qualifications; around 73 000 from HE institutions and 62 000 from FE colleges. However, the latter is an estimate based on numbers completing qualification aims, rather than qualifiers as such, and there are no overall estimates produced on qualified output at sub-degree level.

- The largest group of awards from HE institutions are DipHEs (mainly nursing qualifications). In FE colleges, HNDs, HNCs and NVQs are the main qualification groups but there are many other awards. Again, the subject profiles of qualifiers vary according to qualification type.

- Around 16 000 NVQs were awarded at Levels 4 and 5 (representing only 4% of all NVQ/SVQs awarded in 2001/02). Around half of all NVQ awards at Levels 4 and 5 are assessed by FE colleges and half by private training providers and employers.

- Reliable employment destination information is only available for full-time, sub-degree qualifiers from HE institutions, and so only covers a very small part of the total provision. HESA *First destinations survey* data for 2000/01 shows there were just over 20 000 full-

time qualifiers with sub-degree qualifications with a known destination (UK-domiciled only). Around half of the sub-degree output (with a known destination) went into employment on completion of courses while a third continued in education (mostly transferring to degree study). Unemployment is very low, indicating a high level of demand on the whole. The proportion going into employment is lower than for first-degree students, as are unemployment levels.

- But this destination pattern varies considerably by subject, and in some (business studies, computer science and engineering) the main exit route is to a first degree on completion of HND/DipHE, which suggests a weaker employer demand for this type of qualification than degrees in other sectors and subjects.

- The occupational pattern of those entering employment from full-time study differs between first-degree and sub-degree students, in that sub-degree students tend to enter lower level jobs than first-degree graduates. However, the effect of the large number of nursing students in the sub-degree total tends to distort the figures and when removed, the occupational pattern of degree and sub-degree output looks more similar. This suggests a substitution effect exists.

- Finally, when looking at the distribution of sub-degree qualifications in the employed workforce, they are outnumbered by over three to one by first-degree qualified graduates. However, sub-degree qualifications are more prevalent in some sectors than others, especially in industrial sectors and in some service sectors, such as hotels and restaurants, indicating a different demand pattern (historically) in some employment areas than others.

2.8 Recommendations in relation to data collection

The mapping work has highlighted some important points relating to gaps and deficiencies in the data available that have limited the scope of our analysis. It is recommended that improvements are made, especially in aligning student and qualifier data from the two sectors, and in improving the reliability of the aggregate data from FE colleges on destinations of 'completers' and demand for part-time study from both sectors. (More specific recommendations are included in Section 5.)

Chapter 3 Employers' perceptions of the value of vocational higher education

3.1 Introduction

At the outset, it was agreed that the investigation of employers' perceptions should focus on a limited number of employment sectors. Given the patterns of student participation in sub-degree programmes by subject areas and mode of study, five broadly defined sectors were chosen for investigation: computing/IT; construction; engineering; hospitality/leisure management; and general business. (It was decided not to include nursing in this investigation of employers' perceptions, since that area of education and training has very tightly regulated links with employment.) Many of these sectors are highly fragmented, with small and medium-sized enterprises (SMEs) making up the bulk of the sector. For example, the construction sector employs about 1.5m people, but most of the companies (96%) are very small – there is a very large supply chain. In hospitality, the sector employs about 2m people, but again SMEs (many of them owner-operated) dominate the sector. Given this, we planned to investigate employer perceptions from both SMEs and larger organisations.

In exploring employers' views, we were expecting to find that different traditions might pertain to recruitment practices in these different sectors. Moreover, in some of these broad sectors of employment, we anticipated that professional bodies might exert a strong influence on recruitment and continuing workforce development activities. Thus it was likely that the different sectors would have different views on the role of vocational higher education in meeting their skills needs.

We also tried to bring in a regional dimension by selecting three contrasting locations: Stoke on Trent and Staffordshire, Leeds and West Yorkshire, and south London. In each location, links with universities and colleges providing vocational higher education were used to identify local employers either known to employ people with sub-degree qualifications and/or to support employees to participate in relevant programmes of study leading to such qualifications. Unfortunately this route was less fruitful than anticipated. Providers were not always aware f where 'their' students came from or progressed to (or at least that information was not captured formally); also, some providers were not prepared to supply the information direct to the researchers (seeing such actions as contravening aspects of data protection).

Moreover, where contact was made with local employers, we found some reluctance on their part, especially among SMEs, to participate in the research. Alternative avenues to individual SMEs (for example, local chambers of commerce or business links) also proved generally unsuccessful. Thus, in each location fewer interviews with local employers were undertaken than originally planned: nevertheless some 28 interviews were undertaken overall, primarily with large employers. A number of these large employers were drawn from a compendium of employers known to recruit both graduates and those with sub-degree qualifications, which had been produced by the Association of Graduate Careers Advisory Services (AGCAS).

A broader, more national perspective on vocational higher education was also sought through interviews with representatives of Sector Skills Councils, industry training organisations and professional bodies in the main employment sectors chosen for the study. Within this grouping, a group training organisation representing the views of over 150 SMEs, and a national organisation, representing the views of small businesses, were interviewed. In all, 12 industry-wide representative bodies and six professional bodies were interviewed. (See Appendix 3 for details.)

The aim of the interviews with employers was to investigate their perceptions of sub-degree and intermediate-level vocational HE qualifications, and their experience of recruiting and employing

staff with such qualifications to fill associate professional and higher technician level jobs. The interview schedule was structured around issues relating to recruitment criteria, experiences and preferences; perceived quantitative and qualitative needs and the extent to which they were being met; knowledge of vocational qualifications and provision; the extent of substitution between qualifications for specific posts; links with HE and FE providers (including involvement in curriculum design/course planning, and provision of placements); and experience and views on current practices of meeting the training needs of existing employees.

Within the scope of this study, the findings presented here are illustrative of more general patterns and perceptions: they are not necessarily representative of each of the sectors overall (due to limitations on the numbers of interviews undertaken in each). Nevertheless they do illustrate some of the main determinants of similarities and differences between the employment sectors. As such, they provide some pointers towards issues that need to be addressed by policy-makers in determining the most appropriate methods of organising and funding systems of education and training to meet the skills needs of different parts of the economy to fill associate professional and higher technician jobs.

In the following sections, we consider employer perceptions of vocational HE qualifications in terms of recruiting staff and providing opportunities for continuing workforce development (including accreditation of in-house education and training in terms of national qualifications). Given recent government plans to expand provision of work-related, employer-focused HE programmes (in the form of foundation degrees), we also consider employers' views of such new provision.

3.2 The value of vocational HE qualifications (below degree level) in recruiting staff

In some employment sectors, such as construction and engineering, vocational HE qualifications are valued by employers in their own right. For example, in engineering, about 1000 people annually enter associate professional and higher technician jobs via an HND in engineering. About 700 also progress annually from craft and technician to associate professional and higher technician jobs. Typically, those with an HND are employed at the interface between design and manufacturing, or manufacturing and customer support, where their combination of high-level engineering knowledge and practical skills is required. In the general area of construction, some major construction and surveying firms continue to recruit a mix of HND holders and graduates on to their management trainee programmes (although the length of the programme may well be shorter for those with appropriate degrees).

Employers like the HNC/HND because of its familiarity: often managers, especially in SMEs (but also those at managing-director level of large firms), have the qualification themselves. They are perceived to have recognised national standards. Thus programmes leading to HNC/HND continue to provide a useful route to associate professional and higher technician occupations in these sectors.[4]

One aspect of this employer value can be seen in the extent to which employers support their employees on such programmes. Such 'value' is no doubt linked in part to the extent to which these qualifications have a place in routes to professional recognition within the sectors. Some employers spoke of those with HNC/HNDs having better practical and technical skills than graduates in comparable subjects; in contrast, these same employers described those with degrees as tending to have a broader perspective on the subject. That said, employers were keen to point out that such sentiments were very generalised, and in seeking to recruit people to associate professional/higher technician posts many aspects of an individual's skills, aptitudes and attitudes would be considered.

Vocational HE qualifications in other areas (eg computing, business) seem to be less valued by employers as a direct route to employment. Employers tend to be critical of HE provision in computing/IT at degree level. Such provision is seen as insufficiently responsive to employers' skills requirements, though the ICT employment sector has a very diverse range of requirements and, moreover, the speed of technological advances inevitably causes difficulties for educational providers. That said, employers continue to seek graduate recruits, in preference to those with HNDs, partly because there is now more emphasis in the industry on business awareness and personal skills as well as technical skills: this wider set of skills is referred to by some employers as 'graduateness'. Within computing/IT, employers will also recruit non-cognate graduates to IT jobs, mainly for their personal skills, aptitude and general intelligence. Given the recent economic recession, there is no shortage of people qualified at graduate level. Paradoxically, although large computing/IT employers tend to prefer graduates to those with HNDs, these same employers seem to be less critical of HNDs in general. Moreover, computing/IT SMEs seem to find HND holders more able (than graduates) to 'hit the ground running'. And, as in other sectors, SMEs and new business start-ups will tend to recruit those with prior relevant business experience.

3.2.1 A move away from specific qualifications?

In the general area of business, some large employers were trying to move away from using specific HE qualifications (whether HNC, HND or degree) as a general signifier of the possession of certain high-level skills and attributes. As part of this move they have ceased to operate large graduate recruitment programmes (for which HND holders may also have been eligible). Rather, they are trying to identify suitable recruits in a variety of other ways.

The example below is extracted from a leaflet produced by a major company in the fast-moving consumer-goods sector, which was recently distributed to careers advisers in HE institutions.

> *We believe our standard graduate recruitment programme is no longer practical or cost-effective… We also believe that the generic title 'graduate' is unhelpful because it covers such a range of abilities, interests and motivations. We consider the traditional focus on graduate recruitment is counter-productive, leading to artificial development programmes that do not meet the business needs, and can often disillusion and disappoint graduates. Although we will continue to recruit high-calibre graduates for appropriate roles these recruitment practices will be incorporated into a wider initiative that will draw in young people, with other qualifications, from other sources. The company's recruitment focus will be much more on the roles and jobs currently available. Individuals will be recruited to a much higher specification of academic achievement, personal qualities and motivation, in line with a particular area of the business. In this way, it is intended that recruitment, selection and induction will be much more tailored to role and career path than was possible with the previous more generalist scheme … We recognise that this new recruitment focus may not easily cater for those individuals who may not have a clear idea 'what' they want to do in the company: however, we have found that in the past our highest performers have tended to be graduates who did have a clear idea of 'what' they wanted to do at a relatively early stage of working with the company.*

At the same time, entry to the company's accelerated management development programme will be open to anyone within the company who is 'an exceptional achiever', regardless of their qualification on entry to the company. The company considers selection to such a programme on the basis of people's actual achievements within the business a fairer and more efficient way of nurturing talent, than notional potential (as signified by the title 'graduate' or other qualification label).

Another major company working in the financial services sector continues to recruit a few graduates (about 25) annually. However, its general recruitment policy has moved away from recruiting on the basis of particular qualifications and evidence of technical skills to recruiting

young people on the basis of behavioural and analytical skills, and then training and developing them within the company.

A major retailing organisation (which also recently ceased operating its graduate training programme, partly because of the high drop-out rate) regularly seeks to balance recruitment to supervisory/management posts between internal promotion and external 'hires', with the latter selected primarily on the basis of proven relevant work experience. Employers from the hospitality sector also commented that they sought to develop their existing staff to higher level posts, as well as recruiting people who had recently completed higher education.

To an extent, these specific examples mirror findings reported elsewhere. In a study of high-level skills utilisation in the retailing, business services and transport and communications industries (undertaken in 1999–2000), researchers noted that some companies were conducting internal strategic debates about how far they wished to continue absorbing large numbers of graduates (Mason 2002). In all the service sectors investigated in that study, examples were provided of jobs 'that might be better suited to people with a background of on-the-job training and practical work experience, rather than full-time education' (Mason 2002, page 454).

3.2.2 The value of experience

In employment sectors where employers have traditionally placed more (or at least equal) weight on prior experience than on qualifications per se (eg the hospitality sector), it seems that employers equate vocational HE qualifications at sub-degree level with those at degree level. Except for certain specialist roles (such as marketing, accountancy, human resource management), advertisements for higher level jobs in the hospitality/leisure management area might well specify 'HND or degree desirable but not essential'. Employers' main desire is to attract people with vocational skills and experience: thus HNDs are popular, and some degrees are preferred to others. But, overall, the recruitment process is intended to identify people with drive and confidence who will perform well in the workplace. Getting the 'right' skills mix is sometimes difficult: representatives of the relevant sectoral bodies noted that while the academic benefits of higher education were acknowledged, employers also sought specific skills and attributes in recruiting staff to higher level jobs, which might require generic management skills (such as people management, financial and strategic planning) alongside very specific skills (coaching a group of children or 'taking the ph of a swimming pool').

An earlier study of the hospitality sector (undertaken as part of the National Skills Task Force programme of research on the nature, extent and pattern of skill needs and shortages which helped to inform the development of a national skills agenda) had noted that the industry was, for the most part, suspicious of 'college learning' and employers had a clear preference for work-based training and relevant experience rather than formal qualifications (Rowley *et al.* 2000). However, our study found some evidence that this view might be changing. Although employers were proud of the fact that in their companies 'someone can grow from chef to CEO', there was also a realisation that some graduate recruitment is essential for longer-term success. All the large hospitality/leisure management companies involved in our study were operating graduate recruitment schemes. Furthermore, a smaller hotel was part of a consortium working in collaboration to develop such a graduate recruitment scheme. Even though such schemes invited HND holders as well as honours degree holders to apply, there was some (albeit limited) evidence that following selection processes, preference was given to graduates; their first jobs would tend to be in management, whereas HND recruits would be allocated supervisory roles.

3.2.3 Professionalisation and 'niche' markets

The growing professionalisation of the workforce in certain sectors (eg the 'care' sector, broadly defined) is now creating a new demand for education and training programmes leading to vocational HE qualifications (eg the Early Years sector-endorsed foundation degree; the NVQ

Level 4 in care management). Some of this demand stems directly from government legislation. For example, the Care Standards Act 2000 sets out (among other things) new national minimum standards for under-eights' day care and childminding, and for people working in care homes for older people. In the case of 'under-eights' day care and childminding, the drive to national minimum standards is backed-up by significant government investment, as shown in these quotes from the Early Years website in April 2003 (www.dfes.gov.uk/earlyyears/).

> *A new career and qualifications pathway specifically for Early Years practitioners is being put in place and, for the first time, there will be an Early Years Sector-Endorsed Foundation Degree, which will create a new level of professional practice known as Senior Practitioner. The Foundation Degree will enable Early Years Practitioners, Teaching Assistants and Play Workers to have access to an alternative higher level qualification that will raise standards and give individuals the recognition they deserve.*
>
> *Government is investing £18 million over the next three years to help create these new qualifications in partnership with universities and employers, and help the first 1000 people to start studying for them.*
>
> *Learners will be eligible for a support package… that package includes assistance with costs of child care; a bursary; and provision of a laptop computer.*

In other 'niche' areas of employment, demand is being driven by employers seeking new types of education and training programmes to develop the appropriate set of high-level vocational skills now required in their industry, as this quote from a course provider illustrates.

> *In automative engineering, technological advances in the industry mean that the traditional level of diagnostic skills is no longer adequate. Rather, the industry now requires highly specialised people who can use electronic-based diagnostics in clean room conditions to research, develop and maintain computer-controlled complex systems governing fuel economy, fuel emissions and the like. Given these changing requirements, and a perception that the existing HND provision was not well-recognised by the industry (and had, over the years become less vocational and more academic) one higher education institution is currently working with a world-wide manufacturer of diesel engine components to develop a foundation degree in automative engineering.*

3.2.4 Views of small businesses

The comments so far primarily reflect the views of large employers. SMEs trying to fill posts requiring associate professional/higher technician skills tend to try to recruit suitably qualified people with some work experience. Small businesses in particular perceive a gap between qualifications and practical application with a business orientation, and it is the latter that they seek in recruitment. Those working at the leading edge of new technologies can find that the knowledge and skills signified by academic qualifications (HND or degree) very rapidly become dated, though they would accept that such qualifications give an indication of the individual's capacity to update their knowledge and skills. However, our limited case studies (for example, in electronics) suggest that employers found recruits with HNDs more practical than those with degrees (who tended to be more theoretical), and as such they could often adapt more quickly to the specific roles they were required to fulfil within the company.

Small businesses do not necessarily understand what practical skills and knowledge, academic knowledge and general skills any specific qualification signifies; nor do they have a good understanding of how that package varies with different levels of qualification. Further, it seems that newly qualified individuals are often unable to explain how their set of skills could be of value to the small business, and such businesses do not have specialised recruitment departments that could help individuals to articulate the relevance of their skills to the business.

In consequence, small businesses tend to recruit people qualified to the same level as the current owner–manager.

3.2.5 A preference for particular providers?

As the perceptions discussed so far indicate, employers were sometimes able to make comparisons between job applicants who held a first degree and those who held an HND, but when asked if they had a preference for 'where' such applicants had studied – for example, HE institution rather than FE college – employers indicated they did not have such 'blanket' preferences. Rather, the conversation tended to turn to discussion of why they preferred degree holders from some institutions, rather than others. Such preferences tended to be based on several factors, for example knowledge of particular university departments (possibly in terms of extent to which the university seeks to improve its interface with industry); knowledge of particular degree programmes (in terms of extent to which the programme may have been work-related and/or technical skills may have been developed); and previous track records (within the company) of graduate recruits from particular universities. At least one employer also expressed a preference for HNCs over HNDs, since individuals studying for HNCs (on day-release) were able to integrate their workplace experience with their education and training, over a period of time.

3.3 The value of vocational HE qualifications as progression routes

3.3.1 Evidence of progression

Programmes leading to vocational HE qualifications below degree level certainly continue to serve as progression routes through to honours degree-level education, and are regularly promoted as such by FE colleges and HE institutions. But there is a perception (among some providers and employers) that recent policy drives to increase participation in higher education may have shifted attention away from the specific value of intermediate levels of higher education (as represented by HNC/HNDs and DipHEs) as ends in themselves. Thus students are encouraged to progress to a first degree, and the resultant undergraduate HE output at intermediate level is overshadowed by the first-degree output. As we saw in the earlier mapping section of this report (Section 2), in certain subject areas high proportions of full-time students completing sub-degree courses transfer to first degrees. In 2000/01 over two-thirds of full-time Business Studies students (67%) completing such courses in HE institutions transferred to first degrees: in Computer Science the proportion was slightly lower (58%) but this still represents well over half the output from such sub-degree programmes.

During discussions with colleges, particularly those offering HND programmes under franchise arrangements with a local university, figures as high as 90% were quoted (particularly in business studies). Although anecdotal, this figure accords with findings reported elsewhere. The Quality Assurance Agency for Higher Education 2000/01 subject review of business and management cites examples where almost 90% of FE college students graduating from an HND progressed to degree courses (QAA 2001a). Similarly, the QAA's subject review of Hospitality, Leisure, Recreation, Sport and Tourism comments that the progression of HND students to degree study is a notable feature. As the report states 'there is impressive success in the progression of Higher National students to degree study. For some FE colleges, up to 70% of their students have been successful in this way' (QAA 2001b, page 5).

Clearly this latter comment suggests that such progression is highly commendable and to be encouraged – as well it might be, in terms of widening participation and progression within higher education. But such a comment also begs the question of the extent to which such 'successful progression' might at the same time diminish (in both students' and employers' eyes) the status and value of the intermediate, sub-degree qualification in its own right. (See Section 4 for discussion of students' views.)

A recent, detailed study of progression from HNC/HNDs to honours degrees (HEFCE 2002) found differences in progression routes between and within subject areas, independent of the type of institution attended (HE institution or FE college). Such differences were often linked to employment opportunities and perceived currency of the qualification. That study found that subject area was not itself a factor in progression rates to honours degrees: rather it was the relationship between subject area and occupation opportunities, either locally or nationally.

Discussions with course tutors about progression routes from intermediate-level qualifications through to first degrees also raised a separate issue about the nature of the curriculum for the intermediate award. Some tutors suggested that in seeking to ease progression from HND to degree, the HND curriculum may have been developed in such a way as to enhance articulation between HND and degree, and hence may have become less work-related and more academic in the process. In practice, the scope for such curriculum modification may be enhanced where the HND is approved by a university and offered on a franchised basis in a number of local partner colleges. Given the overall focus of our study, we were unable to explore this issue in any detail but current government plans for the validation and delivery of foundation degrees mean this could usefully be investigated further.

3.3.2 Job opportunities for those with vocational HE qualifications

FE colleges used to be required to record information about the destination of students completing courses (for the LSC's ISR database): however, as noted in Section 2, in most cases (60%) the destination of 'completers' is recorded as unknown. This, together with the perceived emphasis on progression routes, might account for the fact that in colleges there seems to be some lack of awareness of labour market opportunities for, and labour market outcomes of, their full-time HE students. At this level of educational provision at least, some colleges seem to have only weak links with employers. Some of the colleges we contacted to identify local employers employing students who had successfully completed sub-degree programmes at their college, indicated they did not record such information, and in fact had very few links with employers. This finding seems to echo those of the HEFCE-funded study on progression from HNC/HND to degrees where researchers reported 'links with employers on HNC/HND programmes were often quite weak, although there were some significant exceptions to this' (HEFCE 2002, page 26). That said, in our study we found that some colleges were beginning to identify specific personnel within the careers and guidance area to be responsible for investigating particular labour market needs and trends linked to relevant course provision in the area.

We also found that in HE institutions, careers services did not seem to pay as much attention to employment routes for full-time non-graduates as for their full-time graduate output. Moreover, AGCAS, which is the association for careers professionals in higher education, no longer has a separate committee with a specific remit for dealing with HND-related matters. But AGCAS has recently commissioned work to update their HND-specific publication and is seeking to include extra information on destinations from specific HNDs.

And from an employer's viewpoint, there is generally a much bigger choice of potential recruits among degree holders than among people qualified to sub-degree level. An earlier study of business and public service associate professionals (Rogers and Waters 2001) concluded that the growth in the number of graduates employed in such occupations had been driven largely by the expansion of higher education at first-degree level rather than by an increase in demand from employers for 'graduate type skills' (Rogers and Waters 2001, page 3): employers rarely stipulated a degree as an entry requirement. Moreover, in this current study, we found that the recent and continuing economic recession had led to a downturn in demand for high-level computing/IT skills. Such a downturn in demand coupled with a plentiful supply of new

graduates from the HE sector and experienced professionals means employers in this sector currently have a large pool of suitably qualified people from which to recruit.

In contrast, the construction industry (and to a lesser extent engineering) is currently facing skills' shortages in the area of higher level skills. The sector estimates that between 2002 and 2006 it will need to recruit some 60 000 staff with higher level skills and qualifications to provide managerial, professional and technical expertise within the construction industry. But the take-up of HE courses in construction and built-environment related areas (apart from architecture) has been in decline for some years. The Construction Industry Training Board (CITB) notes the many reasons for this decline, including a general trend away from science and technology-related provision in secondary and further education, the narrow nature of many construction degree courses and well-documented problems associated with vocational provision in general (CITB 2003). As a result, employers in this sector do not have an abundant supply of suitably qualified applicants (either HND or degree holders) from whom to recruit at associate professional and higher technician level or other higher levels.

As one major construction company remarked 'the HNC/HND route seems to have withered on the vine'. Such a dearth of suitably qualified applicants (HNC/HNDs or degrees) has led some major contractors to look at the possibility of developing 'conversion' courses (under the umbrella of a graduate apprenticeship framework) to attract good-quality graduates from other disciplines into the industry.

3.4 The value of vocational higher education in workforce development

3.4.1 Traditional patterns

In both construction and engineering there has been a strong tradition of apprenticeships (combining college-based study and on-the-job training) providing the main route to craft and technician-level jobs, from which a proportion progress to associate professional and higher technician jobs. Within engineering, about 7000 young people per year study within the Modern Apprenticeship framework, and about 10% of these go on to professional/higher technician jobs on completion. The construction industry also has a high level of trade apprenticeships: overall about two-fifths of the workforce has completed an apprenticeship. Although this figure is higher for certain craft occupations (eg 73% for woodworking trades) about two-fifths of managers and administrators have also completed an apprenticeship.

But in each of these industries, there are some problems with the current system of Modern Apprenticeships (MAs) and progression on to vocational higher education. For example, in engineering, there is a lack of training places (at both foundation and advanced level) and consequently a shortfall in the number of people entering the sector via this route, and a subsequent shortfall in the numbers available to progress to higher technician jobs. These shortfalls are creating tensions for employers (particularly SMEs) concerned with the further development of staff occupying craft and technician jobs and their progression to higher technician levels, and supervisory and managerial roles. Moreover, such apprenticeship training routes are steered by the funding available. But such funding is currently age-related, with monies decreasing as the apprentice gets older (and ceasing altogether for those aged 25 or over).[5] Thus retraining and development of semi-skilled staff aged 25 or over for higher technician jobs (using the Modern Apprenticeship framework) has to be undertaken without external funding support. Furthermore, the MA framework, and the available funding, covers education and training up to and including Level 3 in the English National Qualifications Framework. Many engineering companies would like some of their staff to progress to vocational higher education (eg HNC/HNDs) while still on their Advanced Modern Apprenticeships but as HNC/HNDs are categorised as Level 4, there is no funding available within the current apprenticeship framework.

In construction, the nature of the business (for major civil engineering and construction works) is such that although the whole project may span a considerable length of time (say 18 months), discrete elements of work are sub-contracted out in 'packages'. The period during which specific craft and technical skills are required to complete that 'package' may be limited to a much shorter period (say 10 weeks), after which time the sub-contracted staff move on to another construction site and another major contractor. The transient nature of this work and the paucity of relevant education and training provision outside major conurbations create some difficulties in using the MA framework to its full extent. That said, major companies are seeking to increase their involvement with MAs, in partnership with sub-contractors. For example, in bidding for medium-term (5-year), social housing contracts, one company was seeking to build in arrangements for Modern Apprenticeships for the local workforce.

Major contractors also seek to sponsor employees recruited as school leavers onto their management trainee schemes to study for HNCs (in building or quantity surveying) on a day-release basis, so that employees are able to integrate their workplace experiences and their concurrent education and training. However, lack of provision of such courses in suitable localities can create difficulties, especially where employees working on major construction projects may be located some distance from any HE institution or college offering the relevant course. Further, the current lack of portability of 'credit' for part-completion of such courses can create difficulties if an employee working in one location is relocated to another major construction site.

3.4.2 Practices outside construction and engineering

In other employment sectors chosen for this study, there is no long-established tradition of apprenticeships leading to vocational qualifications (at Level 3) below degree level: and even though many more occupational areas now operate MAs (eg business administration, retail, customer service) there is some evidence that it is still the traditional sectors associated with apprenticeships that gain better qualification outcomes than the service sectors (see Fuller and Unwin 2003, for a fuller discussion). In the other sectors, without the tradition of apprenticeships, employers do not use an 'apprenticeship followed by day release for HNC' route to develop employees' skills and capabilities from craft and technician levels through to higher technician levels.

In the specific case of computing/IT there is no tradition of apprenticeship, mainly because employers prefer to recruit older people. Employers make little use of college and/or HE institution provision for workforce development. Rather, courses leading to specific vendor qualifications (proprietary certificates) play an important role in determining employer (and employee) options for specialised technical updating and application skills development. Such courses tend to be run in-company, by a private training provider or via the supplier, although there are now some instances of such courses also being offered by the public sector within more general computing/IT programmes leading to HNDs and degrees (particularly those that have recently been developed under the auspices of the New Technology Institutes). However, funding issues have in the past prevented colleges and HE institutions from offering such proprietary courses and these issues still need some attention. As the costs of courses leading to specific vendor qualifications can be prohibitive (especially for SMEs), accessing such provision through HND and degree programmes could prove particularly beneficial.

In the general business area, employees seeking to develop their knowledge and skills of accounting and finance to a high level were supported by their employers to follow externally provided accounting technician courses. With delegation of financial management responsibilities to lower levels within organisations (or between organisations, for example, Local Education Authorities and schools) the need for a range of high-level skills relating to financial management has grown. Those qualified to accounting technician level often take on some of the tasks and responsibilities previously undertaken by chartered accountants: the

latter may well be responsible for taking a more strategic view of financial aspects of the business. Successful completion offers an alternative route to membership of a number of chartered bodies in the accountancy and finance area (rather than via a degree). In fact, the Association of Accounting Technicians (AAT) has currently developed a 'fast-track' route to chartered professional status with the Institute of Chartered Accountants in England and Wales. AAT's own research indicates that currently about one-third of those qualified to accounting technician level (NVQ Level 4) seek to progress to chartered professional status, although demand for progression seems to be growing: this demand seems to be driven more by individuals' aspirations than by any increase in employers' interests in staff development.

In contrast, employees choosing to follow a less specialised programme (eg an HNC in business) do not seem to be supported by their employers to the same extent. In fact we found that some students and employees on such programmes did not wish their current employer to know that they were studying for an HNC (usually on a part-time evening basis). (See Section 4 for fuller discussion.)

3.4.3 External or internal provision?

There is also evidence of large companies increasingly relying primarily on their own internally developed and internally delivered training and development programmes for workforce development, with possibly some specific input from private training providers and/or colleges as appropriate.

Such internal provision can amount to a significant operation within the company: for example, one large retail company currently operates over 25 training centres across the UK run by its own trainers and developers. Although much of this training may be focused on initial induction, it will also cover higher levels of supervisory and management skills.

It is not only general supervisory and management training and development programmes that tend to be undertaken in-house, but other areas (eg specialised programmes relating to aspects of financial services). In fact, the situation we found in this study seemed to reflect quite accurately that found in a study of the employers' role in developing employees' intermediate-level skills undertaken in the early 1990s (Rolfe *et al.* 1994). In that study (which focused on five industries: banking, chemicals, construction, engineering, and hotels and catering) researchers found that companies in chemicals, construction and engineering were adopting structured training policies, following services and guidance provided through external organisations (especially the then Industry Training Organisations). However, this situation was 'less applicable in banking and hotels and catering, where the tradition is to make less use of external training sources' (Rolfe *et al.* 1994, page xv).

Where external input was included, employers we interviewed spoke of developing links with 'a preferred supplier' for specific aspects of in-house training and development programmes. But it was not necessarily a single preferred supplier: rather an employer might seek to develop over a sustained period of time good relationships with a number of different education and training suppliers (whether a particular department within a college, a university in the employer's locality or a private training provider). Employers consider that this 'one-stop shop' approach for specific aspects of its own development programmes (apprenticeship, assessment for NVQs, personal development, mentor development, management development, etc.) helps to maintain quality and standards (with customer and supplier both being clear about expectations and requirements).

But within a single large employer, there is not necessarily a 'hard-and-fast' rule about whether the company will rely on internally designed or externally designed programmes to help develop skills relevant to associate professional and higher technician occupations. In many cases, decisions are based on the extent to which currently available, externally provided courses meet the employer's needs. One large company in our study chose to develop its own training and

development programme in marketing, but for workforce development in personnel functions, supported employees to follow programmes offered by the Chartered Institute of Personnel and Development. Cost considerations may also come into play.

In some instances, employers do see value in measuring their internal programme outcomes against an external reference point (eg accreditation of financial services programmes by the Institute of Financial Services – the official 'brand' of the Chartered Institute of Bankers).

In other cases, some major companies (in sectors like retail and fast-moving consumer goods) can see no clear business case for such external referencing. But decisions about whether or not to map internal provision against external benchmarks may well change over time, as the following example illustrates:

> *One major retail company has tended to rely on in-house training and development for most of its employees. Not only does it see such in-house provision as better able (than externally provided courses) to reflect the company ethos and culture, it has a keen sense of the extent to which such in-house provision can draw on current company working practices and operations to contextualise the learning. Moreover, with their emphasis on developing and promoting staff within the company, the in-house trainers themselves may be able to relate particularly well to those undertaking the courses, and be 'living proof' of the possibilities for personal development and progression within the company. To support internal progression to supervisory/management posts, the company has developed and run a series of seven to eight workshops on various aspects of people management. In the past, such courses have been based around the company's own processes, with the management aspects built around the process-driven focus. However, the company is now looking to extend participation in such courses to other company personnel who are already in management posts, and those newly-recruited externally. So there is now discussion about the possibility of moving away from the company process-driven approach to one that concentrates on generic people management (and the company process-dimension would be delivered via the company's well-established e-learning network).*
>
> *Such a development might then initiate debates within the company about 'why' such training was not mapped against other similar generic training provided elsewhere, and its outcomes mapped against external reference points. These debates might also raise questions about aspects of staff commitment and issues relating to the transfer/exchange value that any such external referencing might bring to individual employees.*

In the specific case of the Army, the decision about whether or not to 'map' internal provision against external reference points is much more clear cut. External accreditation of Army education, training and experience is part and parcel of the Army's concept of 'Whole Life Development'. Whole Life Development (which describes the related activities of professional development, personal development and career management) is geared to maximising soldiers' potential by 'building competence for an Army career, whilst laying the foundations for success in later civilian life' (LFI 2003, 73.004). The Army has already achieved over 500 accreditations of Army courses. For the Army, the 'business case' for external accreditation is linked to aspects of recruitment and retention, and the need for its personnel to be able to use skills in a variety of circumstances and think flexibly.

3.4.4 Continuing workforce development for small businesses

The training needs of small businesses that are part of a supply chain will be governed to an extent by the larger company's training needs, or by the industry's own needs. But, generally, although small business owners–managers may be adept at innovation and change technically (since in a sense that is how they started their business initially), they may be less inclined to

anticipate training and development needs for the medium term, ie they cannot innovate for business growth.

Earlier work by the Council for Excellence in Management and Leadership (now being taken forward by the DfES/DTI Leadership and Management Unit) found no shortage of management and leadership training opportunities being provided by a range of providers, but entrepreneurs were 'confused by the existing offer, unaware how to access it or assess quality, unmotivated by "courses" and often not engaging with government-funded intermediaries' (CEML 2002, page 5).

In this study we found that even where SMEs were planning for the medium term (eg in engineering) the shortfall of training places available for craft and technician-level jobs (within the Modern Apprenticeship framework) needed to replace people moving on to higher technician-level jobs was having an effect on routes into supervisory and management roles. As noted previously, a lack of funding for employer training seems to be a key issue, where funding for the MA is age-related, and there is no funding available to employers to encourage Level 4 education (eg progression to HND or degree) within that framework. In this situation, older people (for whom little funding may be available) may undertake further internally provided education and training, or (say) an HNC in business or a diploma in management studies, to add to their basic engineering qualification. However, in other sectors of employment, there seemed to be some evidence of employers not making full use of available sources of funding for training and development. For example, the Construction Industry Training Board offers grants to employers to defray the costs of off-the-job training, but the take-up of such grants is currently low.

Funding was not the only issue facing SMEs. We found examples of SMEs being highly critical of externally provided training for high-level technical skills: employers spoke of insufficient hands-on experience, inappropriate content and insufficient assessment of the learners' progress. Moreover, it seemed to some employers that current developments towards web-based educational and training provision were being undertaken with insufficient attention to quality and appropriateness of content.

In the case of small businesses there was also criticism that the government-initiated Small Business Service (and within that, the local business links) were not the most helpful in objectively identifying small businesses' specific development needs to maintain business health. Other surveys had found that there were other and better avenues for impartial advice (eg the business accountant).

3.4.5 Accreditation of workforce training and development in terms of NVQs

In certain sectors of employment (eg construction), there is currently a client–industry-led drive towards a fully qualified and competent workforce: the aim being (among other things) that within two years, all managers/ supervisors/ higher technicians will be accredited to at least NVQ Level 4. Industry accreditation[6] for the Construction Skills Certification Scheme 'card' for supervisory/management roles will lapse in 2006, after which time, those without formal qualifications working as supervisors or managers will need to achieve their 'card' (and hence industry accreditation) by achieving the relevant Level 4 NVQs and passing health and safety tests. Thus this industry-led initiative will continue to drive demand for external accreditation of higher level workforce training and development linked to NVQs.

In other areas, such as the 'care' sector, government legislation means that by June 2005 all those working as managers in registered residential care homes have to be accredited to at least an NVQ Level 4 in management. Again, within the short term at least, employer demand for NVQs in this area will be high.

But, despite these specific examples, and notwithstanding the fact that many professional bodies have worked with the national Qualifications and Curriculum Authority to have specific NVQs accepted as part of the National Qualifications Framework, it seems that such external mapping and benchmarking is often of secondary importance to employers (and arguably their employees). Rather it is the link to professional membership routes (if any) that counts for more. Nevetheless, some employers did use the NVQ system to upskill their workforce: such accreditation was seen as providing a benchmark for technician and management roles for the future. In these companies it was considered important to both the employer and the individual that people within a role have qualifications linked either to professional body membership or NVQ levels.

But in general, employers find the process of accreditation for NVQs bureaucratic and cumbersome. As one major construction contractor noted '…NVQs are traditionally linked with craft/technician routes [but] there are some very useful higher level NVQs for supervisors/managers, but the barrier is the whole infrastructure that is needed to underpin the process (of evidencing competence and underpinning knowledge) … such a process does not necessarily sit easily in a busy construction environment'.

However, in some areas (eg surveying) the relevant professional body is beginning to accredit its own NVQ assessors who can then work with corporate clients to facilitate the process of assessing evidence of competence and underpinning knowledge of a group of employees working towards similar NVQs.

In this study we also found some evidence of UK occupational standards and NVQs failing to keep abreast of the needs of specific areas of technology (eg circuit board operations within electronics). In one instance, a consortia of local businesses had negotiated high-level training provision with a local college to meet their specific needs, but the training did not fall within a nationally recognised qualification framework (and so did not qualify for public funding). The companies concerned had raised the issue with the Regional Development Agency.

3.5 The role of professional bodies

In some of the employment sectors chosen for this study, the role of professional bodies in shaping employers' recruitment and workforce development practices was limited: this seems to be the case in computing/IT and hospitality. But in other areas, particularly construction and engineering, the extent to which certain HE qualifications meet (part of) the membership requirements for full professional chartered status plays a significant role in determining employers' recruitment and workforce development practices. Within engineering, the Engineering Council (now called EcUK) and some 30 engineering institutions have responsibility for the professional education and training framework that governs eligibility for the three grades of membership: Chartered Engineer, Incorporated Engineer and Engineering Technician. In both engineering and construction, overall membership rates are heavily biased towards the Chartered Engineer grade (or in the case of the Chartered Institute of Building, the Member grade), whereas the employment situation is arguably weighted more towards the technician role. Some employers seemed to be critical of the actions of the engineering professional bodies in raising the academic requirements for full chartered status, partly to enhance the status of their profession (in relation to other professions). Employers consider that the focus on input standards to HE courses (and specifically the focus on A-level point scores) gives insufficient attention to the recognition of competencies developed through the course: such a focus also limits the availability of access to professional membership via non A-level routes. Moreover, the drive to raise the academic requirements for full chartered status can be seen as diminishing the perceived value of intermediate, sub-degree qualifications. For some employers, the fact that the engineering institutions (ie the professional bodies) are dominated by academics reinforces this emphasis on educational needs rather than the needs of the industry.

That said, there are some (albeit limited) signs of an emerging renewed emphasis on chartered technician status (related to sub-degree qualifications and non-accredited degree programmes). For example, the Engineering Council (EcUK) is currently reviewing its range of professional qualifications to meet the requirements of education, business and industry for the science, engineering and technology community. Part of this review involves a detailed look at the role, status and training of technicians. Another aspect is the development and market testing of a new chartered technologist qualification (ETB 2003).

Following the Royal Institution of Chartered Surveyors (RICS) review of competencies required for surveyors, some employers have realigned their in-house training programmes to the requirements for Tech RICS (technical member of RICS) as opposed to the requirements for chartered surveyor (MRICS). The former training programme is shorter than the MRICS programme, and is open to those with HNCs/HNDs and graduates from non-RICS accredited degree programmes. The membership category of Tech RICS has recently been granted full membership rights by the professional body, and holders are now qualified to undertake the full range of professional surveyor/valuer activities (whereas previously an individual needed to have MRICS to do so). These changes within surveying are very recent, so it is not possible to say to what extent the Tech RICS route will establish itself with employers.

3.6 The role of foundation degrees

As noted earlier, there is currently a government drive to expand provision of work-related and employer-focused higher education through foundation degrees to meet the prevailing skills gap at associate professional and higher technician levels. A number of sector-wide bodies have set up national groups (or are planning to do so) to take forward the development of such programmes within their sector, linked to occupational standards frameworks.

In 2001, the Construction Industry Training Board set up a national task group to build awareness of the new qualification. In addition to employers, the group includes representation from higher and further education and bodies such as the Chartered Institute of Builders, the Construction Industry Council and the Construction Federation. The primary aim of this group has been to support construction and built environment education consortia in the development, implementation and growth of foundation degrees. Work has included the identification and sharing of best practice between employers and other stakeholders, and the commissioning and sharing of market research. CITB also sees a need to ensure that HE providers adhere to a quality standard and align foundation degrees to occupational standards.

In our study, we found that some providers considered the involvement of sector-wide bodies important in representing employer needs in general (including the needs of SMEs), rather than new foundation degrees being too closely linked to the needs of any one particular employer (and arguably the vagaries of their specific business needs). The alignment to occupational standards was seen as important in making explicit the standards of any new programme; in retaining the work focus of the programme; and in enhancing employers' understanding of the skills and competencies developed through such a programme.

Of course, the direct involvement of sector-wide bodies and links to occupational standards are not necessarily interdependent, as we can see in the following example.

> *A university has worked with a major company to develop a foundation degree in aircraft engineering. The programme was developed around the existing occupational standards and industry benchmarks, ie the Joint Aviation Requirements, 147, which essentially constitute the industry's licence to practise. The programme meets a specialist need for aircraft engineers, and shortens the time needed to become a licensed aircraft maintenance engineer from about seven years working wholly within the industry, to four years – two years' full-time foundation degree plus two years' structured work*

experience. The university is now developing a part-time programme for those who have been working in the industry for several years.

Professional bodies are also beginning to identify 'where' foundation degrees will 'fit' within their routes to membership.

Nevertheless, there seems to be some confusion among employers about the intended role and purpose of such new provision at sub-degree level. Employers were often unsure about the 'position' of the new degree, especially as they were aware that the term 'foundation' was already used in a number of different contexts within higher education, for example, foundation level and year 0 courses; foundation year (in art and design). For some, the term 'foundation' implied a general base of skills and knowledge on which an individual might build more specialised learning at a later stage.

In certain sectors (primarily construction and engineering), although sector-wide bodies are actively promoting foundation degrees employers in these sectors could see no obvious need for them, given that existing programmes leading to HNC/HND were felt to fulfil a valuable role, were well understood and delivered to a national standard. As one employer wryly noted '…companies need craft and technician people with highly competent practical skills, but the foundation degree appears to be aimed at trying to change people who are vocationally strong in to "weak" academics…'.

There were also some concerns, expressed by employers and course tutors, about the extent to which employers would be willing and able to provide opportunities for guided work experience for students and employees on foundation degree programmes.

Nevertheless, it was anticipated by the employers that foundation degrees might become an important vehicle for developing the skills and knowledge of those already in the workplace (eg in construction, enhancing site management and project management skills to Level 4, and hence meeting industry-led targets), although it was recognised that there were other existing routes to such development (for example, through the Association of Project Managers). But funding and work patterns were likely to be a major barrier to those already in the workplace, who may have considerable commitments outside work which might limit their patterns of study. Some sector-wide bodies (eg CITB) have called for priority to be given to funding part-time study for foundation degrees for those in employment, with more emphasis on flexible modes of study and responsive support packages: as we have seen earlier, such responsive support packages are already in place for the Early Years sector.

In other sectors employers welcomed in principle the notion of HE programmes focused more on work-related skills, but noted that for companies to buy in to any new qualification, they would need to be clear how it was significantly different from existing qualifications. For example, employers will continue to look for young people with sound academic backgrounds plus demonstrable skills and interest in the business. If a foundation degree can deliver these, it might succeed.

Employers were aware of developments at lower levels of education aimed at trying to achieve parity of esteem between academic and vocational education (eg 14–19 curriculum proposals): but it remained to be seen whether such developments would affect young people's (and their advisers') choices of subsequent options in relation to further vocationally biased education and training. Many employers also saw the foundation degree as providing a logical addition to the existing Modern Apprenticeship framework, but as yet it was unclear whether it would be able to fulfil this role. As noted earlier, student funding issues could be crucial to the success of this role.

In some sectors, there is a clear business case for employers to use foundation degrees as both a recruitment tool and as a vehicle for workforce development (although the case may be being

driven directly by government legislation). In other areas, the business case seems less strong so far.

It is not yet clear whether these new programmes are going to attract a ‘new’ type of student to higher education, or whether they are going to attract those who previously would have sought to undertake another sub-degree programme (eg an HND). Some providers considered that, as currently conceived, the foundation degree was particularly suitable as a vehicle for enhancing and developing the skills and knowledge of those already in the workplace.

Chapter 4 Students' perceptions of employers' needs and recruitment strategies

4.1 Why the students' voices?

Attempts to understand the demand and supply of a specific level of qualification often omit the student dimension: the implication being that the proportion of the population holding a specific qualification is the result solely of the combination of shifts in occupational structure and the increased participation in and diversification of higher education as a result of government policies.

Our hypothesis here is that the demand for vocational higher education is driven by a complex relationship between students', employers' and providers' expectations and strategies, and the latter are influenced, at least to some extent, by government policies.

The social side of the demand (the students, their families and significant others) therefore constitutes a key factor in the rise of people qualified to Level 4 since the 1980s, irrespective of governments' incentives and compensatory policies, as shown by international comparisons (World Bank 2002). We also know that the social value of education is a complex blend of cultural and economic values and determinisms: choices of courses made by students and the value granted to qualifications are not exclusively related to their estimated direct economic benefits. These private expectations and strategies are also responsible for the upgrading of the stock of qualification held that led in some sectors to the situations of underemployment of graduates observed from the early 1990s (Connor and Pollard 1996*).*

For all these reasons, we felt that students' and employees' points of view and concerns about the value of their qualification might offer a useful counterpoint to employers' views on the extent to which the current provision of vocational higher education was meeting their needs for higher level skills.

4.1.1 The method

Interviews and group discussions[7] were undertaken primarily to compensate for the paucity of existing data on the employment experiences of students with sub-degree vocational qualifications (especially when studying part-time). Using such discussions we also hoped to gain a better understanding of the importance granted to the so-called employers' needs in the choice of sub-degree programmes.

At the outset, it had been anticipated that links with employers in each of our chosen geographical locations would be used to identify employees already in possession of recently acquired sub-degree qualifications or currently studying for them. However, given the problems in identifying local employers (Section 3.1), it was found more effective to identify suitable student and employee groups by working through HE institutions and FE colleges delivering vocational HE programmes.

Focus group discussions were undertaken in universities and colleges in our three different regions, Staffordshire, Yorkshire and South London. Five broad subject areas were covered by the group discussions – two common to each region (business; IT/computing) and three chosen for their particular local relevance or specific nature (accounting and finance; construction; visual arts). In all, 65 students were interviewed in 12 focus groups: the students were located in five colleges and two universities.

4.2 The students' views: a complex and fragmented picture

The narratives collected from the students reflect the high level of fragmentation of the vocational HE field, with its intermediate status as the highest common factor. However, we found that perceptions of future prospects and of employers' preferences strongly correlated with the type of course taken and the current professional or work situation of the students. This tends to corroborate the relative homogeneity of students' profiles by type of programme as shown in the mapping exercise (some subjects more represented on certain types of programmes, varied gender pattern, marked age profile differences). Therefore, in presenting the students' views, we have grouped them by type of programme. Where the composition of our groups does not reflect the above trends this is due to local institutional arrangements (for example, a merged HNC/HND programme implemented in response to falling enrolments).

Student voices were captured for information purposes and the quotes used here were chosen for what they tell us rather than because they are 'representative'.

4.3 The extent and nature of employer support for their studies

Our respondents were often not on formal staff upgrading or training plans: most of them were studying to further their career within or outside an organisation, rather than to respond to its immediate needs. Not surprisingly, the level of employer support for their further education and training (in terms of fees paid; book allowances; paid study leave) tended to reflect the anticipated relevance of the qualification sought to that employment sector.

At one extreme, students on generic programmes such as HNC/HND in business enjoyed little or no support from employers and were more likely to link their education and training to a possible change of job.

> *I chose to do it myself and I didn't ask the company to support me because at the time I didn't want any ties in case I went somewhere else. I have to make up all my time and I've funded it all myself*. (HNC Business, college)

> *In fact the employer that I was working for at the time didn't support me at all. But because I was being made redundant they were nice enough to give me the time off in the afternoon but I had to make my time up*. (HNC Business, college)

> *When I did ask them about it once I'd joined the course they gave me 5 study days off over the 2-year period which really just covered the residential 3 days, the day away that you had to do which left me with 1 day extra.* (HNC Business, university)

Where employer support was provided, it took various forms but seldom met all the costs associated with studying. In one college, for instance, all the students interviewed said they were funded by their employers but not allowed time off from work so they were studying during the evening.

Finally, it appears that employers supporting students on these types of courses (mostly educational institutions or organisations in the public sector)[8] did so predominantly as part of their organisation's general staff development policy, rather than in response to any new development or requirement for enhanced skills and knowledge within the organisation. Public sector workers from our sample (on programmes such as computing or business) indicated that they were combining this study with other forms of training provided by their organisation.

The other extreme is represented in our groups by students on specialised or more vocational courses. The support from employers appears less ambiguous here as these programmes have either been recommended or imposed by the employer or are mandatory (through state or

sectoral regulation). Support here is more generous, since arguably the employer has a direct and immediate interest in the course. Students on a foundation degree programme in computing and networking had, for instance, simply been asked if they wanted to go on the programme even though they had not been actively seeking further study opportunities. Employer support in their case amounted to one day per week 'release' from work, plus payment of course fees.

At the same time, companies may not be willing to choose the best courses, as in the case of one student whose request to change (once she realised that the course was not delivering what she and her company expected) to a more expensive course was turned down by the company on economic grounds:

> *I have all my expenses paid, my petrol, company car if I can't get in my own car or train fare, time off, I don't have to work my time back, all my course books are paid for if I need them. I mean they're really good like that but they're a bit begrudging when it comes to going on another one …. what they want is a piece a paper that says you are qualified to do your job really. That's all it is.* (HND Software Engineering, university)

Generally speaking, students from this category (of more specialised courses) enjoyed the employer support needed to undertake their studies. However, we did find examples where, although there was an unambiguous business case for employees undertaking further education and training (eg NVQ Level 4 Care Management to meet government-set standards), no explicit employer support was forthcoming for some students within the cohort.

Between these two extremes lies a wide range of student opinions on the level of support from employers. Some students deliberately left their employers unaware of their own education and training plans in anticipation that they might say no – especially in small businesses where the employer might view such skills and knowledge upgrading (at the company's expense) as threatening the business' stability and its capacity to retain that member of staff.

Employer support can also be gauged in terms of the extent to which the employer maintains an interest in the programme being followed by their employee/s. In this study we found some stark contrasts. For example, students on one part-time HNC (in business) were highly critical of the extent to which the units being offered had been altered. The college had had to combine two separate HNC programmes because there was insufficient demand for the separate programmes. Although the students recognised that the programme was consequently less relevant to their needs (and those of their employer) they were loath to alert their employer to the changes for fear of losing employer support for their studies. In contrast, an engineering company that had devised its own apprenticeship scheme reviewed annually, with the college provider and employee, the units being followed within the HNC programme to ensure an adequate match to business needs.

4.4 Student or employee career plans for further education

Where the full-time vocational HE programme is clearly part of a degree track (eg HNC/HND in business or in computing offered by a university or via franchised arrangement with the local FE colleges), the students we interviewed tended not to have immediate career ambitions and had imprecise notions of the type of job they might end up doing.

> *Why I've done it is so that I've got some back-up to the experience I've gained over the past few years. If when I've got this I then feel 'well yes I do want to do this'… because I don't know which direction I want to go in at the moment or what I want to do. I'm doing it rather than doing nothing with an understanding of what'll happen in 2 years' time.* (HNC Business, university)

In this category we found that students were keen to undertake further learning, but that this was not exclusively related to specific job opportunities. Indeed, to some extent they were

participating in a particular programme because it was what their employer was prepared to support or because their prior qualifications were insufficient to gain access to an alternative programme; but they were also keen to participate in less work-related learning.

> *For me, because it's the part-time HNC. You could do it over two evenings because there wasn't any opportunity to have the time off work or anything. It just fitted in basically and I was aiming to do the degree but this was the way you did the HNC and then the top up to the degree.* (HNC Business, university)

> *We are all looking at it as a first step. I will decide on what to do when I get the HNC. But I want to get a degree, I have never thought of the HNC. That is why I need a good HNC.* (HNC Computing, college)

Students on other vocational HE programmes, which seemed to lead to captive job niches, tended to value the professional content of their course and its immediate applicability to the 'real' world of work much more. These students, generally older, linked any prospect of topping up their qualification to the specific requirements of their sector or company.

For instance, HNC Building students considered that the HNC was a well-recognised qualification within the industry. One planned to continue, post-HNC, onto a degree in building (3 years' part-time); another (who had come through the 'tools' route as a self-employed carpenter, before joining a building servicing company) intended to study for Membership of the Chartered Institute of Building (MCIOB) on completion of the HNC.

Similarly, students studying for Association of Accounting Technicians qualification – technician stage (equivalent to NVQ Level 4) felt following the AAT route (from foundation, through intermediate, and now technician level) had given them significant practical experience of accounting and finance, and provided them with good understanding of the 'basics'. They considered that studying for a degree might have given them more theoretical knowledge, but less understanding of the 'nuts and bolts' of accounting.

Finally, it is worth noting cases where a narrowly focused vocational course was perceived beyond its immediate relevance as giving students a (renewed) taste for learning, as in our group of students on the NVQ Level 4 Care Management course where some had signed up for additional courses at the college. Moreover, although many of these students were already well-qualified, and some had extensive management expertise, they recognised the value in participating in the college-based programme as they gained considerable assistance in creating their portfolio of evidence of competence and at the same time were able to build up the underpinning knowledge required for an NVQ Level 4. However, with this group of students and other groups who had already gained considerable experience in the workplace there was some criticism that assessment of prior experiential learning was not being used to the advantage of learners.

The university or college policy may be as influential as the employers' expectations and support in students' decisions to progress beyond a sub-degree qualification. Students in our university-based focus groups tended to show much more awareness of direct and alternative routes, and express much more faith in honours degrees than those whose course, taken in a college, was more integrated into their day-to-day professional tasks than into their personal and educational development plans.

4.5 Perceptions of employer preferences for types, levels and providers of vocational HE programmes

Here again we see variations by type of programme and particular employment sector. Those on full-time programmes believed that employers did not value sub-degrees and that they

tended to prefer to recruit people with degrees. For example, although students on an HND computing programme considered they would have better technical and work-related skills than someone with a computing degree, they considered they would need to explain to an employer 'what' an HND was (and that explanation would include the position of an HND relative to a degree – 'one level down'). It is worth noting that the students who thought that qualifications were used as screening devices for recruitment purposes were more likely to be on a progression track towards a degree.

Those studying on a part-time basis (particularly those studying during the evenings) considered employers would value the level of commitment evidenced by the individual's desire and willingness to study while holding down a full-time job. Many of those following programmes related to their current job on a part-time basis commented favourably on the extent to which their studies were related to their day-to-day work tasks, and how tasks and study complemented each other.

However, in two of our groups, it was suggested that employers tend to 'choose college/university courses because they're cheaper, whereas other courses cost thousands' and thus the students felt that they were not acquiring the skills they needed. These students considered that private sector training was more closely aligned to employment needs and more up to date, and thus would be preferred by both students and employers.

> *They stick us on these courses because they're cheaper but the specialist courses are probably eight times more expensive as* [*these ones. They stick you on these courses and you get your qualification but you never actually focus and specialise on a particular subject*. (HND Software Engineering, university)

However, it should be noted that the employer interviews did not reveal such clear-cut preferences.

Concerns about the lack of visibility of sub-degrees on the job market were expressed in most groups, stressing again the problem of identity of this level of qualification.

Students on a foundation-degree course considered that the title 'degree' attached to their qualification increased its attractiveness. By way of contrast, students following an HNC in Business thought the 'certificate' award was compared unfavourably (by employers) with the 'diploma' award, even though the students considered their certificate programme to be at a similar level to the diploma programme. It may be that once employers were aware of the content being covered, they were more likely to appreciate the value of particular programmes. For example, one student explained how the course was of value to her and her employer as follows:

> *I think the content of the course is of value more than the actual title of the course. For instance, if I say I'm doing this module my boss is interested in what you're doing within the module … and once I tell him he'll say 'oh you'll be running this company next year'. And he may say it in a joking way but he's appreciating that I've got an understanding.*

But signals from employers, from the labour market and from educational institutions about sub-degrees may sometimes be contradictory, generating confusion in the students' estimation of the value of their studies. For example, students on a photography course noted (in regard to employers' preferences), that 'if you want a job as assistant photographer, what you need to have first is a good portfolio'. A qualification is not seen as necessary in a sector where many established photographers have no qualification. But all students agreed that taking this course was a plus, not so much as a business case to present to an employer, but to establish oneself as an independent photographer ('you would have more credibility *vis à vis* customers if you have got a professional qualification'). However, where professional photographers were qualified, they often got their diploma from this same college, which was believed to have

generated a sort of corporate spirit. Employers interviewed in the sector had little knowledge of this HND in terms of the skills and competencies it provided but admitted that, as alumni of the same college, they were keen on taking students on work placement and linking them with potential employers. Students from this group were therefore less attracted by the progression route, thinking that what they needed above all was experience; at the same time their course tutor believed that getting a job with such a narrow qualification was almost impossible these days, unless it was combined with a degree in digital photography or in media studies.

Whether confident or pessimistic about the value of their qualification on the job market, students following courses unrelated to their current jobs appeared quite poorly informed about the real immediate prospects offered by the qualification they were pursuing, indicating a less direct link between their studies and a professional strategy.

4.6 The importance of having the 'right qualifications' for achievement of personal career ambitions

This is probably the key point of students' perceptions. Their views can be cruelly realistic; they point to the seemingly confused views of employers about post-16 vocational education and their 'blind' preference for degrees (in some sectors); or they refer to instances of snobbery among degree-level employees in their company who treat them condescendingly. Students' narratives also reflect personal trajectories, retrospectively justified as rational choices. Very few of them felt they had made the wrong choice, although it is likely that some students (on courses such as HND Business or HND Computing) did not choose this particular route specifically for more vocationally oriented education and training. Degrees of satisfaction reflected short-term strategies rather than informed anticipation of the market requirements.

A provisional conclusion to draw from this overview of students' views is that their motivations and expectations are less determined by what employers' views might be, or how the job market is likely to be in the next 5 or 10 years, than by the perception that more qualification is the key to better jobs and recognition.

This view is largely corroborated by interviews with careers advisers and course tutors in FE colleges and HE institutions. To them, the 'pressures' on some areas of vocational higher education at sub-degree level are essentially due to the constantly evolving 'access, widening participation and progression' policies, rather than directly to employer demands.

Chapter 5 Conclusions, recommendations and key issues for policy-makers

The area of vocational higher education is highly fragmented and heterogeneous, and it continues to serve a number of different but arguably overlapping roles. In certain sectors of employment, the value of vocational higher education is determined in large measure by the extent to which the professional body recognises the vocational qualification within its own framework of routes to professional membership.

Thus we see vocational higher education continuing to serve as a route to professional membership, an alternative to a first degree. It also provides 'niche' qualifications, meeting specific employer demands in certain sectors and areas of work (although arguably the relatively small numbers are overshadowed by the much larger first-degree output). It has a role as a high-level workplace qualification to improve the professional practice of existing employees. A further role (for individuals) is to provide opportunities to develop new skills and knowledge not necessarily related to their current workplace role and so provide a possible route to career change. Finally, a new role can be discerned – a work-based route through higher education, attracting new groups of learners; these 'new' groups result from government legislation, or government policies to professionalise certain areas of the workforce. This new role also arises from employer demands for different skills sets suitable for associate professional and higher technician level occupations in some particular industries.

There are, however, still some paradoxes in employers' actions in relation to recruitment practices. On the one hand employers indicate a preference for those with vocational HE qualifications (eg HND) since, in the employers' words, individuals with such qualifications tend to have better technical and practical skills, are less theoretical in their approach to work tasks, and can 'hit the ground running'; on the other hand they continue to prefer to recruit graduates, particularly in areas of industry, or aspects of the business where a greater business awareness, a broader perspective and personal skills are required in addition to technical skills. What we have not been able to pursue within this study is whether it is the nature of the degree programmes (including the fact that they are at least 1 year longer than HND programmes) or the nature of the student intake that results in these views: it is probably due to a complex mix of factors. Moreover, there is generally a much bigger choice of potential recruits among degree holders than among people qualified to sub-degree level.

The government is now seeking to engender greater parity of esteem between vocational and academic programmes and qualifications. It is also seeking to expand provision of work-related and employer-focused higher education through the relatively new foundation-degree qualification. Within its skills strategy, the government is also seeking to stimulate a demand-led approach to skills training.

Findings from this study suggest a number of key issues relating to these policy drives should be addressed to ensure the success of these policies.

- Employers need much clearer information about the distinct roles and levels of the range of HE qualifications currently being provided, and any new ones proposed.
- Educational providers need greater knowledge of employer needs for associate professional and higher technician skills in their locality, and to engage with employers to ensure that provision meets their needs.
- Employers need to see a strong business case for using external education and training provision for developing knowledge and skills at associate professional/higher technician level (as opposed to in-house provision) and for using external referencing and benchmarking.

- Employers do not necessarily make hard-and-fast distinctions between different types of providers (public or private, and within public, college or HE institution). Instead they make choices on grounds of appropriateness to their specific needs, and costs. Employers tend to use a 'preferred supplier' model, which they see as maintaining quality and standards.

- The role of professional bodies in certain sectors is crucial in terms of shaping employers' recruitment and continuing workforce development activities. In some cases actions taken by professional bodies to raise the academic requirements for chartered status may be damaging the extent to which more vocationally oriented education and training programmes (which arguably might better reflect the needs of industry) can flourish.

- The available funding and current funding mechanisms for post-16, work-based programmes (which are both age-related and related to educational levels) limit the extent to which employers can use them to progress employees through to higher levels of skills and knowledge linked to associate professional/higher technician jobs.[9]

- There should be more emphasis further down the education system on advising young people about the whole range of further education and training opportunities available: the continuing emphasis on progression to first degrees does not fit well with a policy that seeks to achieve parity of esteem between academic and vocational qualifications.

- In terms of the proposed expansion of work-related and employer-focused higher education, employers will need to become much more aware of the distinctiveness of the new foundation degree (in relation to existing provision) and the output standards of such provision before they will 'sign up' to the new award. There is a danger that, without strong labour market signals, students may seek to progress from the new foundation degree straight to an honours degree, and foundation degrees will fail to establish their distinctiveness and status in the labour market (especially an HE labour market that continues to be dominated by the bachelor's degree, see also Robertson 2002). There is also a danger that the need to establish a progression route beyond the foundation degree may distort the nature of the foundation degree programme itself. If a distinguishing feature of such expanded provision is sustained employer involvement in design and delivery, that involvement might be best effected through sector skills-endorsed task forces (rather than particular employer involvement which would be subject to the vagaries of local markets). Moreover, aligning such programmes to occupational standards would help to make their standards explicit.

But none of the new developments in vocational higher education should limit an individual's opportunities to engage in high-level, work-related education and training not specifically related to their current workplace situation.

Recommendations for data collection

The current method of reporting student data on such a large and heterogeneous collection of qualifications as a single entity 'other undergraduate' is unhelpful in aiding understanding of the magnitude and scope of this area of higher education. Student data should be reported at a much more disaggregated level, and the current separate reporting systems (for the HE sector and the learning and skills sector) should be made more compatible. The qualification coding system currently used in the ISR also needs to be overhauled and made more user-friendly (see Clark 2002).

The whole area of demand for qualifications from students and from employers at this 'other undergraduate' level is under-researched. There is no national database on student progression from Level 3 to Level 4 (in particular through the work-based or FE route to higher education).

To gain an adequate and comprehensive picture of employer demand for different qualifications and provider sectors, data on qualifications gained and destinations of students at Level 4 in FE colleges should be collected in a standardised way.

We welcome the HESA initiative to extend the collection of first destinations data to cover part-time students in HE institutions. We recommend the initiative be extended to cover FE colleges. Data on part-time students studying at this level should also include an indication of where such students are employed while in study.

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[1] The term 'non-prescribed higher education' is used to classify mainly (but not exclusively) higher level vocational qualifications currently funded by the Learning and Skills Council. 'Prescribed higher education' is funded by the HEFCE (see Clark 2002 for further details).

[2] For the purposes of this report, the learning and skills sector is used to mean provision in FE colleges – what was previously called the FE sector. However, it is recognised that the learning and skills sector is, in fact, much wider and covers school sixth forms, sixth form colleges, local authority and adult education institutions, private and voluntary sector providers, training providers and work-based learning, as well as FE colleges.

[3] These are a recent initiative providing a sector-specific framework for integrating study at HE level with structured work-based learning and completion of relevant NVQ units and key skill units (www.dfes.gov.uk/graduateapprenticeships).

[4] In nursing (not included in employer interviews) the data-mapping exercise shows a very close link between programmes leading to DipHE and associate professional occupations.

[5] Since the research was carried out there has been a change in the age range. According to the skills strategy White Paper (DfES 2003b), paragraph 5.28 and 5.29: 'On the age cap, public funding for Modern Apprenticeships is currently limited to those aged 24 and under ...We are committed to removing the age cap. As a first step we will change the rules with immediate effect so that young people who start their Modern Apprenticeship at any point up to their 25th birthday can complete it. Beyond that, the implementation of this change will need to be managed over a period of time'.

[6] The Construction Confederation operates the Construction Skills Certification Scheme (CSCS), which sets standards of work competence required in various occupations within the industry. Industry accreditation is based on current standards used for NVQs, and as each CSCS 'card' is introduced there is a period of industry accreditation during which time an experienced individual without formal qualifications may apply for a 'card' relevant to their role. The individual's work competence is checked against the appropriate list of skills, standards and job areas, signed off by their employer and certified by a person with professional institution membership status.

[7] See Appendix 4 for a list of group discussions.

[8] More generally, evidence shows that the public sector is most likely to provide off-the-job training to its employees (Hogarth *et al*. 2001 and DfES 2002).

[9] See note 5.

Appendix 1 Data sources

The main data sources used are:

- **Higher Education Statistics Agency (HESA**): This is the main source of data on students studying at undergraduate level at HE institutions; ie it covers students reported by HE institutions only. This can include franchised students at FE colleges (eg on foundation courses). It also provides data on qualifications obtained and first destinations of graduates from full-time undergraduate courses. There are limitations on the level of disaggregation possible in the published data by type of qualifications and mode (most tables show HND/HNC and all other combined). However, we requested additional runs of tables through LSDA to obtain further breakdowns and these have enabled us to separate the various qualifications. The HESA data used are for the 2001/02 academic year.

- **LSC/ISR:** LSDA provided special runs of the Individualised Student Record (ISR) database held by the LSC, which covers student enrolments in FE colleges at Levels 4, 5 and higher education. Analysis was obtained by subject, course type and personal characteristics of students, for the 2001/02 academic year. The LSC also provided some achievement data, but little on qualifications gained or destinations of leavers (because of large number of 'unknowns' recorded). Note: the ISR is not directly comparable with the HESA student record system, so care has to be taken when aggregating the two sets of data.

- **Edexcel**: This is the main source of data on HND/C registrations. The latest year was 2001. 1997/98 data was available by subject and HE/FE sector.

- **DfES: The Statistical Bulletin: VQ Awards**This is the main source of published national data on students gaining qualifications at NVQ Levels 4 and 5, by subject area and sector (but relatively small numbers so little useful breakdown). The latest year available is 2001/02.

- **Labour Force Survey** (LFS): This provides data on the qualifications of the UK workforce. We have analysed LFS data on people whose highest qualification is at Level 4, and separated out degree and other Level 4 qualifications.

Appendix 2 Detailed data tables for mapping provision

Table A1: Student enrolments in undergraduate level courses by subject (F&P/T), English HE institutions, 2001/02. Main sub-degree qualification aims, plus degree students

Subject group	Inst u/g credit	HND	HNC	Dip HE	Cert HE	Prof qual at u/g level	Foundation Degree	Other u/g dips&certs	Sub-degree quals (excl u/g credit)	Percentage (%)	Total First degree	Percentage (%)
(1) Medicine and dentistry	26	0	0	106	0	0	0	46	152	0.1	435	0.1
(2) Subjects allied to medicine	28 097	360	232	45 459	2461	4426	98	19 174	72 210	33.1	58 502	8.7
(3) Biological sciences	911	894	194	126	163	36	172	504	2089	1.0	48 118	7.2
(4) Veterinary science	0	119	0	0	0	0	0	0	119	0.1	301	0.0
(5) Agriculture & related subjects	317	2233	417	49	29	13	204	150	3095	1.4	5469	0.8
(6) Physical sciences	1006	527	380	49	160	0	53	1155	2324	1.1	26 959	4.0
(7) Mathematical sciences	38	76	1	0	2	1	0	112	192	0.1	9038	1.3
(8) Computer science	3886	9237	2332	122	845	81	164	3617	16 398	7.5	51 534	7.7
(9) Engineering and technology	602	4289	4071	9	39	141	275	391	9215	4.2	38 152	5.7
(A) Architecture, building and planning	533	1138	1970	32	18	195	129	674	4156	1.9	15 769	2.3
(B) Social, economic and political studies	3607	901	390	4,576	1698	852	29	9455	17 901	8.2	61 417	9.1
(C) Law	32	154	30	28	236	323	0	661	1432	0.7	30 872	4.6
(D) Business and administrative studies	1814	9700	2430	541	660	8934	434	4850	27 549	12.6	77 790	11.6
(E) Librarianship and information science	270	882	39	43	6	153	45	605	1773	0.8	15 996	2.4
(F) Languages	8292	58	0	112	477	21	0	4624	5292	2.4	45 685	6.8
(G) Humanities	7941	29	0	77	838	0	0	4167	5111	2.3	27 662	4.1
(H) Creative arts and design	4579	4792	431	378	201	17	428	1045	7292	3.3	68 824	10.2
(I) Education	2,905	1547	224	459	3105	785	658	7194	13 972	6.4	13 953	2.1
(J) Combined/Invalid code supplied	16 3801	373	8	533	12 048	72	102	14 896	28 032	12.8	76 189	11.3
Total	**22 8657**	**37 309**	**13 149**	**52 699**	**22 986**	**16 050**	**2791**	**73 320**	**21 8304**	**100.0%**	**672 665**	**100.0%**

Source: HESA 2001/02. NB This shows students taking main sub-degree qualifications. Others not shown are relatively small in number, see Table 1

Table A2: Region of domicile of students at English HE institutions on different sub- degree programme, 2001/02

	Prof qual	Foundation Degree	DipHE	CertHE	Other u/g Dips/certs	HND	HNC	Total
Eastern	1335	193	5429	905	5335	4045	2360	19 602
East Midlands	1,334	362	2308	1402	6192	3244	1226	16 068
London	3773	649	8148	1185	14 541	5828	1268	35 392
Merseyside	245	57	2525	397	1712	720	415	6071
North East	201	161	3382	833	5943	1410	1021	12 951
North West	889	359	6847	1305	7698	3788	1655	22 541
South East	2807	269	5521	6745	9446	5527	1750	32 065
South West	1159	193	5134	1615	7444	4376	978	20 899
West Midlands	2592	193	7075	1647	3125	3622	1258	19 512
Yorkshire and Humberside	1239	277	4600	5723	8241	3321	726	24, 127

Source: HESA 2001/02

Table A3: Main qualifications at FE colleges: enrolments in qualifications at Levels 4, 5 and higher education, excluding degree qualifications (2001/02)

Qualification title	Qualification Group	Number of enrolments
NVQ in Accounting	NVQ	8456
NVQ in Management	NVQ	5233
Graduateship	Other	2842
NVQ in Care	NVQ	2706
HNC in Business	HNC	2671
HNC in Computing	HNC	2316
HNC in Building Studies	HNC	2310
HNC in Business and Finance	HNC	2215
Advanced Certificate in Marketing	Other	2077
HNC in Engineering (Electrical/Electronic)	HNC	1940
HND in Computing	HND	1614
Foundation Stage of CIPS Graduate Diploma	Other	1507
HND in Business and Finance	HND	1441
HNC in Engineering	HNC	1406
HND in Business	HND	1392
Certificate in English Language Teaching to Adults (CELTA)	Other	1384
NVQ Level 4, CWF C, Programme Area 4	NVQ	1340
Professional Stage of CIPS Graduate Diploma	Other	1331
Membership Part 2	Other	1286
HND in Nautical Science	HND	1241
Diploma in Management	Other	1192
University Certificate in Education	Other	1075
Advanced Diploma in Child Care and Education	Other	1007
Diploma in Marketing	Other	970
HNC in Engineering (Process/Plant/Instrumentation)	HNC	870
HND in Science (Sports Studies)	HND	851
HNC in Business Information Technology	HNC	826
Management Diploma	Other	764
HNC in Computer Studies	HNC	759
Certificate of Proficiency in English (CPE)	Other	733
HNC in Engineering (Mechanical Engineering)	HNC	723
Diploma in Social Work (DipSW)	Other	714
DipHE in Professional Awards	DipHE	700
HND in Design (Graphic Design)	HND	700
HNC in Early Childhood Studies	HNC	697
Professional Management Foundation Programme	Other	689
Intermediate (1)	Other	675
Merchant Navy Chief Mate Certificate	Other	659
HNC in Engineering (Mechanical/Manufacture)	HNC	641
Diploma in Nursing	Other	620
HND in Travel and Tourism Management	HND	619
HND in Early Childhood Studies	HND	618
BEd/BEd (Hons) In Service	Other	615
HND in Hospitality Management	HND	608
C&G 2360-03 Electrical Installation Course C	C&G	570
HND in Multi Media	HND	566
NVQ in Accounting (Accounting Practice/Industry and Commerce/Public Sector)	NVQ	544

Source: ISR 2001/02

Table A4: Level 4, 5 and HE enrolments at FE colleges by mode of attendance and subject area (2001/02)

		Qualification group							
		C&G	Degree	DipHE	HNC	HND	NVQ	Other	Total
	Total	**2340**	**16 217**	**1465**	**31 156**	**27 411**	**23 554**	**45 789**	**147 932**
Mode of attendance	Full-time full-year	452	8982	471	2934	21224	1254	5469	**40 786**
	Full-time part-year	79	290	20	662	576	891	2449	**4967**
	Part-time – evening	959	982	15	7460	603	4844	12 386	**27 249**
	Part-time – other	671	5822	958	19 097	4890	12 431	20 377	**64 246**
	Part-time – open	78	66	1	698	45	2633	2447	**5968**
	Part-time – distance learning	101	75	0	305	73	1501	2661	**4716**
Programme area	Sciences	156	1435	76	4719	3790	109	2602	**12 887**
	Agriculture	244	181	13	675	918	103	335	**2469**
	Construction	794	127	0	3942	466	238	997	**6564**
	Engineering	832	166	0	9576	3546	1821	1597	**17 538**
	Business	0	2954	701	6978	5020	15 461	22 873	**53 987**
	Hotel and Catering	10	1884	0	530	3173	242	304	**6143**
	Health and Community Care	0	1546	244	2277	1289	3803	4657	**13 816**
	Art and Design	34	4081	138	2443	8676	753	1210	**17 335**
	Humanities	270	3843	290	16	249	952	11 191	**16 811**
	Basic Education	0	0	3	0	0	72	0	**75**
	Not known	0	0	0	0	284	0	23	**307**

Source: ISR 2001/02

Table A5: Home region of Levels 4, 5 and HE students and institution region (2001/02)

		Local Learning and Skills Council of the institution										
		East of England	East Midlands	Greater London	North East	North West	South East	South West	West Midlands	Yorkshire & Humberside	Unknown	Total
Home local LSC of the student, based on student postcode	East of England	10 319	182	792	60	299	399	138	221	163	12	**12 585**
	East Midlands	360	6631	39	77	523	206	89	791	801	4	**9521**
	Greater London	543	39	12 200	135	466	1265	154	187	103	10	**15 102**
	Northern Ireland	3	2	0	20	84	15	21	15	44	0	**204**
	North East	10	37	10	8949	148	32	34	52	185	1	**9458**
	North West	31	39	30	142	20 322	60	80	293	653	1	**21 651**
	Scotland	12	5	9	112	295	38	83	15	81	0	**650**
	South East	262	47	1076	112	561	15 260	596	402	171	2	**18 489**
	South West	40	48	82	50	404	454	10 446	427	151	5	**12 107**
	Wales	22	18	29	36	398	56	104	179	88	0	**930**
	West Midlands	25	191	37	45	583	176	179	16 117	182	7	**17 542**
	Yorkshire and Humberside	22	152	20	458	589	49	97	135	13 457	6	**14 985**
	Unknown	449	154	289	896	1270	797	432	900	701	0	**5888**
	Total	**12 098**	**7545**	**14 613**	**11 092**	**25 942**	**18 807**	**12 453**	**19 734**	**16 780**	**48**	**139 112**

Source: ISR 2001/02

Table A6: Subject of main sub-degree qualifications obtained at HE institutions in England, 2001/02

	Prof quals	Dip HE	Cert HE	Other u/g dips & certs	HND	HNC	All sub degree	Percent age (%)	First degree	Percent age (%)
(1) Medicine and dentistry	0	12	0	32	0	0	44	0.1	398	0.2
(2) Subjects allied to medicine	1948	12 567	938	6733	125	72	22 383	31.7	14 949	8.2
(3) Biological sciences	7	139	234	216	285	68	949	1.3	13 133	7.2
(4) Veterinary science	0	0	0	0	12	0	12	0.0	114	0.1
(5) Agriculture and related subjects	1	30	29	40	718	79	897	1.3	1637	0.9
(6) Physical sciences	0	65	72	367	141	122	767	1.1	8098	4.4
(7) Mathematical sciences	0	24	9	75	17	1	126	0.2	2755	1.5
(8) Computer science	82	267	417	697	2380	823	4666	6.6	10 571	5.8
(9) Engineering and technology	35	138	126	787	1281	1108	3475	4.9	9813	5.4
(A) Architecture, building and planning	102	56	27	248	227	647	1307	1.9	3902	2.1
(B) Social, economic and political studies	71	1587	652	1839	240	144	4533	6.4	16 849	9.2
(C) Law	40	77	154	334	27	6	638	0.9	7 380	4.0
(D) Business and administrative studies	1019	263	425	1262	3081	840	6890	9.8	20 841	11.4
(E) Librarianship and information science	0	59	80	321	321	14	795	1.1	4020	2.2
(F) Languages	0	83	130	699	35	0	947	1.3	12 090	6.6
(G) Humanities	0	61	243	778	8	0	1090	1.5	7605	4.2
(H) Creative arts and design	3	260	427	320	1695	118	2823	4.0	18 318	10.0
(I) Education	142	234	1246	3347	516	24	5509	7.8	3942	2.2
(J) Combined/Invalid code supplied	5	197	562	12 397	93	17	13 271	18.8	26 789	14.6
Grand total	**3455**	**16 119**	**5771**	**29 925**	**11 202**	**4083**	**70 555**	**100.0**	**183 204**	**100.0**

Source: HESA Qualifiers, 2001/02

Table A7: Qualifications held by workforce (16–64): percentage in each sector holding sub-degree level qualifications, and degree-level qualifications as highest qualification

	NVQ4/DipHE/ HND&C		Higher, first and other degrees		All	Ratio: sub-degree: degree
	N	Percentage (%)	N	Percentage (%)		
A: Agriculture, hunting and forestry	17 861	4.8	26 302	7.1	372 588	0.68
C: Mining, quarrying	12 208	11.1	27 021	24.6	109 995	0.45
D: Manufacturing	306 142	6.9	581 838	13.1	4 432 478	0.53
E: Electricity gas and water supply	27 588	12.7	40 492	18.7	216 893	0.68
F: Construction	111 949	5.4	136 342	6.6	2 073 990	0.82
G: Wholesale, retail and motor trade	148 143	3.5	305 375	7.2	4 260 309	0.49
H: Hotels and restaurants	49 681	3.8	65 713	5.1	1 293 719	0.76
I: Transport, storage and communication	92 880	4.6	199 935	9.9	2 015 876	0.46
J: Financial intermediation	73 898	5.7	313 377	24.1	1 298 252	0.24
K: Real estate, renting and business activ.	211 417	6.5	1 092 835	33.5	3 257 463	0.19
L: Public administration and defence	140 294	7.4	436 281	23.0	1 892 821	0.32
M: Education	129 315	5.6	1 029 763	44.4	2 321 611	0.13
N: Health and social work	185 850	5.9	641 322	20.4	3 136 938	0.29
O: Other community, social and personal	83 955	5.6	297 859	19.7	1 510 183	0.28
All	**1 596 963**	**5.6**	**5 214 450**	**18.4**	**28 356 229**	**0.31**

Source: Labour Force Survey, 2001

Appendix 3 List of companies, sector-wide and representative bodies interviewed

Construction Industry Training Board
Construction Industry Council
Chartered Institute of Building
Royal Institution of Chartered Surveyors

2 large construction companies
1 large surveying company

Hotel, Catering and International Management Association
Hotel Training Foundation
SPRITO (National training organisation for Sports and Recreation)

6 large hotel chains
1 small hotel

Engineering Employers Federation
Science, Engineering and Manufacturing Technologies Alliance (SEMTA)
Engineering Technology Board (ETB)
An Engineering Group Training Association (representing 150+ SMEs)

2 large engineering companies

British Computer Society
E-Skills UK

3 large computing companies

Association of Accounting Technicians
Chartered Institute of Public Finance and Accounting
Chartered Management Institute
Federation of Small Businesses
Business Links 4 London

6 large companies (fast moving consumer goods, financial services, retail, manufacturing, media, public sector) and the armed services

6 SMEs (electronics, media)

Appendix 4 Focus group discussions, by subject and location

Subject	Award	Location
Business	HNC	FE college south London
	HNC	FE college south London
	HNC	HE institution Staffordshire
	HND	FE college Staffordshire
Computing/Software Engineering	HNC	HE institution Yorkshire
	HND	FE college south London
	HND	HE institution Staffordshire
	FD	FE college south London
Building	HNC	FE college south London
Photography	HND	HE institution Yorkshire
Accounting	AAT	FE college south London
Care Management	NVQ4	FE college south London